Contents

WASH Economics and Financing: towards a better understanding of costs and benefits

615 Editorial: WASH Economics and Financing: towards a better understanding of costs and benefits
Britta Augsburg and Tristano Sainati

Research Paper

618 Interaction of village and school latrines on educational outcomes in India
Jennifer Orgill-Meyer

Research Paper

628 Sanitation dynamics: toilet acquisition and its economic and social implications in rural and urban contexts
Britta Augsburg and Paul Rodríguez-Lesmes

Research Paper

642 Understanding the costs of urban sanitation: towards a standard costing model
Tristano Sainati, Fiona Zakaria, Giorgio Locatelli, P. Andrew Sleigh and Barbara Evans

Research Paper

659 Life-cycle costs approach for private piped water service delivery: a study in rural Viet Nam
Melita Grant, Tim Foster, Dao Van Dinh, Juliet Willetts and Georgia Davis

Research Paper

670 An assessment of penetration for pay-to-fetch water kiosks in rural Ghana using the Huff gravity model
Philip T. Deal and David A. Sabatini

Research Paper

680 Understanding water demand and usage in Mandalay city, Myanmar as a basis for resetting tariffs
Tanvi Nagpal, Henry Rawlings and Maël Balac

Research Paper

691 Unpacking piped water consumption subsidies: Who benefits? New evidence from 10 countries
Laura Abramovsky, Luis Andrés, George Joseph, Juan Pablo Rud, Germán Sember and Michael Thibert
Research Paper 716 Does payment by results work? Lessons from a multi-country WASH programme
Guy Howard and Zach White

Research Paper 724 Benefits and costs of rural sanitation interventions in Ghana
Mark Radin, Brad Wong, Catherine McManus, Saumitra Sinha, Marc Jeuland, Eugene Larbi, Benedict Tuffuor, Noble Kofi Biscoff and Dale Whittington

Research Paper 744 Expanding safe fecal sludge management in Kisumu, Kenya: an experimental comparison of latrine pit-emptying services
Rachel Peletz, Andy Feng, Clara MacLeod, Dianne Vernon, Tim Wang, Joan Kones, Caroline Delaire, Salim Haji and Ranjiv Khush

Research Paper 756 Users are willing to pay for sanitation, but not as much as they say: empirical results and methodological comparisons of willingness to pay for peri-urban sanitation in Lusaka, Zambia using contingent valuation, discrete choice experiments, and hedonic pricing
James B. Tidwell

End of special issue

Review Paper 768 Review of frameworks and tools for urban strategic sanitation planning: considering technology innovations and sustainability
Dorothee Spuhler and Christoph Lüthi

Review Paper 786 Multiple and complex links between babyWASH and stunting: an evidence synthesis
Amy Waller, Monica Lakhanpaul, Samuel Godfrey and Priti Parikh

Review Paper 806 Temporal analysis of water, sanitation, and hygiene data from knowledge, attitudes, and practices surveys in the protracted humanitarian crisis in Myanmar
Marta Domini, Sunny Guidotti and Daniele Lantagne

Review Paper 818 WASH and Gender: a critical review of the literature and implications for gender-transformative WASH research
Jess MacArthur, Naomi Carrard and Juliet Willetts

Research Paper 828 ‘Solar septic tank’: evaluation of innovative decentralized treatment of blackwater in developing countries
Thammarat Koottatep, Stephanie Connelly, Tatchai Pussayanavin, Sopida Khamyai, Wattanapong Sangchun, William Sloan and Chongrak Polprasert
Research Paper
841 Myth and reality of community ownership and control of community-managed piped water systems in Ghana
Nicholas Fielmu

Research Paper
851 Predictors of hand hygiene behaviours among primary and secondary school children in a rural district setting in Zimbabwe: a cross-sectional epidemiologic study
France Ncube, Artwell Kanda, Maude Chahwanda, Margaret Macherera and Bigboy Ngwenya

Research Paper
862 Comparative life cycle assessment of four commonly used point-of-use water treatment technologies
Tara Walsh and Jonathan Mellor

Research Paper
874 Performance evaluation of anoxic–oxic–anoxic processes in illuminated biofilm reactor (AOA-IBR) treating septic tank effluent
Sittikorn Kamngam, Thammarat Koottatep, Nawatch Surinkul, Chawalit Chaiwong and Chongrak Polprasert

Research Paper
885 Chlorine disinfection against Legionella pneumophila biofilms
Abdelwahid Assaidi, Mostafa Ellouali, Hassan Latrache, Hafida Zahir, Abdelaziz Karoumi and El Mostafa Mliji

Research Paper
894 Estimating averting expenditure in domestic water use: evidence from Ghana
Anthony Amoah

Research Paper
905 Septage composition and pollution fluxes from cesspits in Palestine
Belal Amous, Nidal Mahmoud, Peter van der Steen and Piet N. L. Lens

Research Paper
916 Improving the hydrological performance of a rainwater for drinking (RFD) system at a rural hospital in Vietnam
Gippeum Bak, Anh Dzung Dao and Mooyoung Han

Research Paper
927 On-site sanitation density and groundwater quality: evidence from remote sensing and in situ observations in the Thiaroye aquifer, Senegal
Mor Talla Diaw, Seynabou Cissé-Faye, Cheikh Becaye Gaye, Seydou Niang, Abdoulaye Pouye, Luiza C. Campos and Richard G. Taylor
Research Paper

940 Impact of community health promoters on awareness of a rural social marketing program, purchase and use of health products, and disease risk, Kenya, 2014–2016
Sunkyung Kim, Mark Laughlin, Jamae Morris, Ronald Otieno, Aloyce Odhiambo, Jared Oremo, Jay Graham, Mitsuaki Hirai, Emma Wells, Colin Basler, Anna Okello, Almea Matanock, Alie Eleveld and Robert Quick

Research Paper

951 Water, sanitation, and hygiene (WASH) conditions and prevalence of office visits due to anemia: a regional-level analysis from Peru
Benoit Mougenot, Elard Amaya and Percy Herrera-Añazco

Research Paper

959 When is shared sanitation acceptable in low-income urban settlements? A user perspective on shared sanitation quality in Kumasi, Kisumu and Dhaka
Vasco Schelbert, Dario Meili, Mahbub-Ul Alam, Sheilah Simiyu, Prince Antwi-Agyei, Kwaku Amaning Adjei, Bismark Dwumfour-Asare, Mahbubur Rahman, Sharika Ferdous, Supta Sarker, Isabel Günther and Christoph Lüthi

Research Paper

969 Longitudinal study of microbial load of drinking water and seasonal variation of water quality at the point of use in food establishments of Addis Ababa, Ethiopia
Aderajew Mekonnen Girmay, Sirak Robele Gari, Azage Gebreyohannes Gebremariam, Bezatu Mengistie Alemu, Martin R. Evans and Gebreab Teklebirhan Gessew

Research Paper

979 Immediate influences of hygiene education sessions on handwashing behaviors of selected Nepali students
Govinda Prasad Devkota, Sheri Bastien, Petter D. Jenssen, Manoj K. Pandey, Bhimsen Devkota and Shyam Krishna Maharjan

Research Paper

986 Backpack use as an alternative water transport method in Kisumu, Kenya
Sunkyung Kim, Kathryn Curran, Li Deng, Aloyce Odhiambo, Jared Oremo, Ronald Otieno, Richard Omore, Thomas Handzel and Robert Quick

Research Paper

996 Reconfiguring urban waterscape: water kiosks in Delhi as a new governance model
Uma Dey Sarkar and Bikramaditya K. Choudhary

Practical Paper

1012 Implementation of point-of-use water treatment methods in a rural Tanzanian community: a case study
T. M. Ngasala, S. J. Masten, C. Cohen, D. Ravitz and E. J. Mwita

Short Communication

1019 Fertilizer effect of composted sewage sludge and cattle manure on Pelargonium growth
Nesrine Dridi, Lilia Romdhane, Renata Ferreira and Noomene Sleimi
Short Communication
1026 Use of group maturity index to measure growth, performance, and sustainability of community health clubs in urban water, sanitation and hygiene (WASH) program in Zimbabwe
Mitsuaki Hirai, Arnold Cole, Moreblessing Munyaka, Steven Mudhumiwa, Taurai Maja and Aidan Cronin

Discussion Paper
1034 Impact of alum pretreatment on biosand filter performance: a commentary on Curry et al. (2020)
Caetano C. Dorea

Discussion Paper
1036 Impact of alum pretreatment on biosand filter performance: reply to Dorea’s commentary on Curry et al. (2020) article
Kevin D. Curry and Christopher P. Bloch

In Memoriam
1037 The H in WASH: a reflection on the contribution, style and legacy of Professor Val Curtis