

Editor-in-Chief

Barbara Evans
University of Leeds, UK

Editors

Guy Howard
University of Bristol, UK
Jessica Kaminsky
University of Washington, USA

Meera Mehta
CEPT University, India

Darren Saywell
Plan International USA

Regina Souter
International WaterCentre, Australia

Elizabeth Tilley
The University of Malawi, Malawi

Marcos von Sperling
Federal University of Minas Gerais, Brazil

International Editorial Board

Mr Manuel Alvarinho, Water Regulatory Council (CRA), Mozambique

Ms Patricia Bakir, Independent Consultant, Jordan

Professor Abul Barkat, University of Dhaka, Bangladesh

Professor Rafael Bastos, Universidade Federal de Viçosa, Brazil

Mr Jay Bhagwan, Water Research Commission, South Africa

Professor Damir Brdanovic, UNESCO-IHE, The Netherlands

Ms Clarissa Brocklehurst, Adjunct Professor and Affiliated Faculty Member, Water Institute at UNC, USA

Professor Richard Carter, Richard Carter & Associates Ltd, UK

Dr Andrew Cotton, WEDC, Loughborough University, UK

Dr Piers Cross, Sanitation and Water for All, South Africa

Dr Valerie Curtis, London School of Hygiene and Tropical Medicine, UK

Dr Jorge H. Ducci, Inter-American Development Bank, USA

Mr Peter Feldman, WaterAid, USA

Dr Martin Gambrill, World Bank, USA

Professor A. K. Gosain, Indian Institute of Technology Delhi, India

Professor Michael Hantke-Domas, Universidad Andrés Bello, Chile

Dr Bilqis Amin Hoque, Environment and Population Research Centre, Bangladesh

Dra. Blanca Jiménez, UNESCO, France

Prof Hamanth Kasan, Rand Water, South Africa

Professor M. Mahmud Khan, Tulane University, USA

Dr Amah Klutse, CREPA, Burkina Faso

Dr Pete Kolsky, Water Institute of the University of North Carolina at Chapel Hill, USA

Dr Thammarat Koottatep, Asian Institute of Technology, Thailand

Dr Pawan Labhassetwar, National Environmental Engineering Research Institute, India

Professor Emilio Juan Lentini, University of Buenos Aires, Argentina

Dr Steve Luby, ICDDR, B, Bangladesh

Professor Duncan Mara, University of Leeds, UK

Dr Silver Mugisha, National Water and Sewerage Corporation, Uganda

Dr Viet-Anh Nguyen, Hanoi University of Civil Engineering, Vietnam

Professor Choon Nam Ong, National University of Singapore, Singapore

Mr Daniel A. Nolasco, NOLASCO & Assoc. Inc., Argentina

Mr Philippe Reymond, Eawag/Sandec, Switzerland

Dr Jan Willem Rosenboom, The Bill and Melinda Gates Foundation, USA

Professor Edgar Quiroga Rubiano, Universidad del Valle, Colombia

Professor David Sabatini, University of Oklahoma, USA

Dr Jose Eduardo Salazar, SUNASS, Peru

Mr Miguel Solanes, IMDEA Water, Spain

Professor John Soussan, Stockholm Environment Institute - Asia, Thailand

Professor A. Szollosi-Nagy, UNESCO-IHE, The Netherlands

Dr Paul Taylor, Cap-Net, South Africa

Mr Bruno Valfrey-Visser, HYDROCONSEIL, France

Professor Xiaochang C. Wang, Xi'an University of Architecture & Technology, China

Aims and Scope

The Journal of Water, Sanitation and Hygiene for Development is a peer-reviewed journal devoted to the dissemination of high-quality information on the science, policy and practice of drinking-water supply, sanitation and hygiene at local, national and international levels. The journal publishes original contributions including research, analysis, review and commentary. It emphasizes issues of concern in developing and middle-income countries and in disadvantaged communities world-wide, such as:

- Water supply: intermittent supply, community and utility water supplies, water treatment, distribution, storage and use, water access and quality
- Sanitation: collection, transport, treatment, use, discharge, on-site and off-site sanitation, resources recovery
- Hygiene: behaviours, education, change
- Technical and managerial issues: characteristics of and constraints to conventional and innovative approaches, technical options and boundaries of technical application, emerging issues, emergencies and disasters, impacts on health, poverty and development, sustainability, demand, marketing, organizing supply chains
- Institutional development: roles of public and private sector, capacity building, governance, education and training
- Financing and economic analysis: including cost-effectiveness and cost-benefits, role and impact of subsidies, user fees, financial instruments, innovations in financing
- Policy: examining all aspects and developments in the role of national policy on service provision, human rights and rights-based approaches policy, developing appropriate and scaleable legal and regulatory approaches, norms and standards
- International policy: aid and aid effectiveness; international targets, conventions and agreements, UN and international policy

Submission

All manuscripts should be submitted electronically through our Online Submission and Peer Review System:

<https://www.editorialmanager.com/washdev>. Authors should prepare their papers in accordance with the current *Instructions for Authors*, available at https://iwaponline.com/washdev/pages/Instructions_for_authors or from the Editorial Office at the address given inside the back cover.

Copyright © 2019 IWA Publishing

Except as otherwise permitted under the Copyright, Designs and Patents Act, 1988, this publication may only be reproduced, stored or transmitted, in any form or by any other means, with the prior permission in writing of the publisher, or in the case of xerographic reproduction, in accordance with the terms of a licence issued by the Copyright Licensing Agency. In particular, IWA Publishing permits the making of a single photocopy of an article from this issue (under Sections 29 and 38 of this Act) for an individual for the purposes of research or private study.

US Mail Identification Statement

Journal of Water, Sanitation and Hygiene for Development is published four times a year in March, June, September and December. The annual subscription price for 2019, including postage, is given on the inside back cover. Full details of subscriptions (including electronic access) can be obtained on request from the distribution agents, Turpin Distribution Ltd, at the address given on the inside back cover. IWA Publishing is a company registered in the UK, no. 3690822.

US publishing office: *Journal of Water, Sanitation and Hygiene for Development* c/o Mercury Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001, USA. Periodicals postage paid at Rahway, NJ, USA.

Postmaster: please send address corrections to *Journal of Water, Sanitation and Hygiene for Development* c/o Mercury Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001, USA.