

IWA SPECIALIST GROUP GROUNDWATER MANAGEMENT NEWSLETTER

ICLEI RESILIENT CITIES CONFERENCE

26th – 28th June 2019
Bonn, Germany

IWA Groundwater Management Specialist Group has partnered with BGR and IAH for a joint presentation in the main conference programme in this annual global forum on urban resilience and adaptation.

IWA GWM SG will also collaborate with IWA Cities of the Future to deliver a common theme.

To register for the conference follow this link:

<https://resilientcities2019.iclei.org/>



Groundwater resources play a critical role in water-supply globally — for potable supply at a variety of scales, for industrial processes, for agricultural irrigation and livestock watering, and in sustaining aquatic ecosystems. But they are all too widely overlooked at the management level. As a result today they are widely subjected to irrational exploitation and subsurface contaminant loads that threaten their sustainability through depletion and pollution.

The **IWA Groundwater Management Specialist Group** provides a unique platform to address the technical and institutional issues related to groundwater use, management and protection on an interdisciplinary basis and at an international level.

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Editor: Julia Gathu – jgathu@yahoo.com

IWA Groundwater Management - SG Secretary

OPENING / WELCOME MESSAGE

It is our pleasure to welcome you to the first newsletter of the newly reconstituted IWA Groundwater Group – retitled **Groundwater Management Specialist Group** to reflect a change in focus onto the institutional, socio economic and technical facets of groundwater management in urban areas worldwide. In addition to the undersigned, our Steering Committee includes:

| SC MEMBER & CONTACT | COUNTRY | INSTITUTION |
|---|------------|---|
| Stephen FOSTER (Chair) <u>DrStephenFoster@aol.com</u> | UK | University College London & IAH Urban Groundwater Network Co-Chair |
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| Julia GATHU (Secretary) <u>jgathu@yahoo.com</u> | Kenya | Drilling for Life |
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| Susie MIELBY (external co-opted) <u>smi@geus.dk</u> | Denmark | GEUS |
| Anne BOUSQUET (external co-opted) <u>anne.bousquet@unhabitat.org</u> | UN (Spain) | UN-Habitat/Global Water Operators Partnership Alliance (GWOPA) |

MESSAGE FROM CHAIR

In recognising groundwater as a major ‘cross-cutting’ consideration in the implementation of IWRM, the Groundwater Management SG will focus on the critical role of groundwater use for improving water-supply security for water utilities under global-warming/climate-change pressures and the inter-related needs to conserve groundwater quality and augment groundwater recharge.

As a result, the Groundwater Management SG will focus upon the following facets of groundwater resources as appropriate to industrialized and/or developing nations:

- ***Mobilising*** water utilities as much more active partners in urban groundwater resource management and protection.

- **Emphasising** the critical role of groundwater storage for water-supply security in climate-change adaptation, with the concomitant need to conserve quality and augment recharge
- **Recognising** groundwater as a ‘major cross-cutting element’ in the implementation of IWRM strategies
- **Promoting** urban groundwater monitoring capable of providing the sort of baseline information essential for sound engineering decision-making by the many potential stakeholders in engineering construction and operation, and in environmental management
- **Rationalising**, controlling and integrating the phenomenon of large-scale private self-supply from groundwater in many developing cities.

FEATURED ARTICLES: CITY- SCALE URBAN GROUNDWATER MODELS

City Scale Urban Groundwater Models

In any city, the citizens would like to have access to multiple services: transportation, schools, hospitals ... and all these in a safe environment. To achieve this, municipalities and utilities should put their heads together, and consider groundwater impacts on ground and underground infrastructure.

A city-scale urban groundwater model shows what should be done, how and where, based on the interaction assessment between urban infrastructure, geological and groundwater media.

The main potential outcome would be the optimization of surface and subsurface urban planning, management and design, avoid accidents and minimizing financial and disruptive losses. This is of direct interest to authorities, investors, insurance companies, municipalities and citizens.

Such a model provides insight to multiple existing problems and every city should have one.

Constantin Radu Gogu

Further reading recommendations:

- Groundwater monitoring and modelling at city scales – identifying good practice and effective knowledge exchange; Bonsor H C, Dahlqvist P, Moosmann L, Classen N, Epting J, Huggenberger P, Garcia-Gil A, Janza M, Laursen G, Stuurman R, Gogu C R EU-COST Subsurface Action Working Group 2 Report (www.suburban.squarespace.com); 2016
- Urban hydrogeology studies in Bucharest city, Romania; Gogu C R, Gaitanaru D, Boukhemacha M A, Serpescu I, Litescu L, Zaharia V Moldovan A & Mihailovici M J 2017 . Procedia Engineering (Elsevier) 209: 135-142.
- Urban Groundwater Use in Tropical Africa – a key factor in enhancing water security – Stephen Foster, Anne Bousquet & Sean Furey.
- Groundwater Management Specialist Group Article – “***Urban Groundwater – mobilizing stakeholders to improve monitoring***” – upcoming article – IWA Source Magazine.

NEWS, PROJECTS, ACTIVITIES & ISSUES

Some activities planned for this year:

1. ICLEI Resilient Cities Conference - Bonn-Germany: June 2019 – Presentation co-organised with IAH and BGR with Dr. Stephen Foster representing IWA, Michael Eicholz for BGR and Helen Bonsor for IAH. An avenue for promoting groundwater as a major cross-cutting-theme in developing resilient cities.
2. GWM SG will seek to co-opt senior executives from utilities to emphasize the critical role of groundwater storage for water supply security in climate change adaptation.
3. Articles for The Source magazine – A first article “**URBAN Groundwater – mobilizing stakeholders to improve monitoring**” has already been submitted to IWA Source Magazine for publishing. A second article highlighting private off-grid self-supply from groundwater versus water utility provision in fast developing cities is underway.
4. Promoting in different regions. An upcoming Regional Groundwater Conference in Belgrade is scheduled for June 2020 – To be confirmed once approved.
5. Engaging/partnering with IWA Initiatives e.g. [Water-Wise Initiative](#), [Action Agenda for Basin Connected Cities](#).
6. Quarterly management committee virtual meeting.
7. Virtual meeting/webinar for general GWM SG members.

If you want to get involved in any of these activities, please contact: igathu@yahoo.com or DrStephenFoster@aol.com

Water Utility Questionnaire

Kindly help us in evaluating utilities from all over the world and their interaction with groundwater by completing the following survey:

<https://www.surveymonkey.com/r/LY39DQL>

The data collected will be shared through the IWA Source magazine in the form of an article.

UPCOMING EVENTS

- **ICLEI Resilient cities conference – Bonn, Germany. 26th – 28th June 2019**
<https://resilientcities2019.iclei.org/>
- **Regional Groundwater Conference series – Belgrade – 18th – 20th June 2020**
- **IWA World Water Congress & Exhibition 2020 - Copenhagen/Denmark – 18th - 23rd Oct** <https://worldwatercongress.org/>

Groundwater will be a major theme with prospects of an open forum for the GWM SG.

Send us an email if you are interested in finding out more about our activities – igathu@yahoo.com; DrStephenFoster@aol.com

NEWS FROM IWA HQ

[Gavà, first Spanish city to endorse the IWA Principles for Water-Wise Cities](#)

Gavà becomes the first city in Spain, and number thirty in the world, to take the first step to become a water-wise city. The signing of the Principles for Water-Wise Cities of the International Water Association (IWA) places Gav...

New IWA Governing Member in Sri Lanka

The IWA network has expanded its reach and diversity with the addition of a new governing member in Sri Lanka, the country that will host the IWA Water and Development Congress 2019, from 1 to 5 December in Colombo. Joining IWA as...

Launch of Water Efficiency Labelling report

The UN High Level Panel on Water state “The replacement of inefficient taps, toilets, showerheads, washing machines, and dishwashers with more efficient models can have significant effects on water consumption in the home, reduc...

IWA and IDB launch the digital platform “AquaRating Community of Practice”

A digital platform with the purpose of promoting a transformation in the improvement of the management of companies in the water sector worldwide: AquaRating Community of Practice AquaRating, a systematized method of comprehensive... ([Español](#))

LET2019- The 16th IWA Leading Edge Conference on Water and Wastewater Technologies - Edinburgh/United Kingdom, 10 Jun-14 Jun 2019

The IWA Leading Edge Conference on Water and Wastewater Technologies is designed to be the place where new ideas are introduced and the opportunity is provided to interact with the “best of the best”. [Call for papers open until 01 April 2019!](#)

International Young Water Professionals Conference – Toronto, Canada, 23-27 June 2019

IWA aims to empower young talent, like yourselves, to contribute to delivering the solutions for sustainable water management (IWA Vision). This conference is one of the vehicles in which we support young water professionals to develop themselves to be at the forefront of decision making. [Register today!](#)

IWA Water and Development Congress & Exhibition 2019 – Colombo, Sri Lanka, 01 Dec-05 Dec 2019

The development event for water professionals. Water is one of the most critical issues facing the world today. With developing and emerging economies confronted with some of the biggest water challenges they also represent some of the biggest opportunities to get our water future right. More information and deadlines [here](#).

NEWS FROM IWA PUBLISHING

Selected books



Future Drinking Water Infrastructure: Building Blocks for Drinking Water Companies for their Strategic Planning

Mirjam Blokker, Claudia Agudelo-Vera, Luc Palmen, Chris Büscher & Inke Leunk

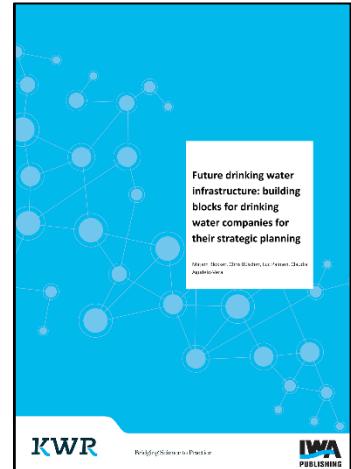
ISBN: 9781789060485

March 2019 • 190 pages • ebook only

Available as an Open Access ePDF

<https://www.iwapublishing.com/books/9781780409672/regenerative-sanitation-new-paradigm-sanitation-40>

Drinking water is and will remain a topic of high priority on international and national political agendas. A critical element of this agenda comprises the infrastructure required to extract, produce and distribute water. This study deals with drinking water infrastructure in the Netherlands that, although highly advanced, faces some major challenges. The aim of this book is to support in this task, by providing a framework that will help practitioners in their strategic planning of drinking water infrastructure investments.



Human Acceleration of the Nitrogen Cycle: Managing Risks and Uncertainty

Organisation for Economic Co-operation and Development (OECD)

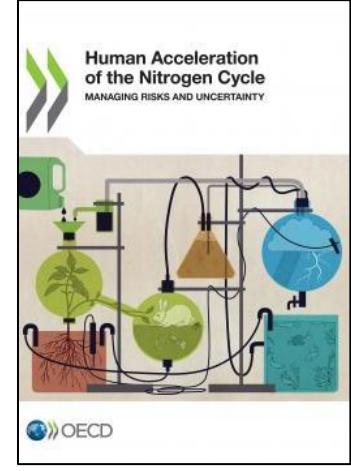
ISBN: 9781789060430

February 2019 • 176 pages • Paperback

IWA Members price: £ 24.00 / US\$ 36.00 / € 30.00

<https://www.iwapublishing.com/books/9781789060430/human-acceleration-nitrogen-cycle-managing-risks-and-uncertainty>

This report examines risks of releasing of excessive nitrogen into the environment (climate change, ozone layer depletion, air pollution, water pollution, loss of biodiversity, deterioration of soil quality). It examines uncertainty around the ability of nitrogen to move between ecosystems and cause "cascading effects". To better manage nitrogen risks locally one must consider global risks and work to prevent excess nitrogen in all its forms, developing cost-effective strategies for all its sources. This report also provides guidance on the use of nitrogen policy instruments.



Clean Water Using Solar and Wind: Outside the Power Grid

Gustaf Olsson

ISBN: 9781780409436

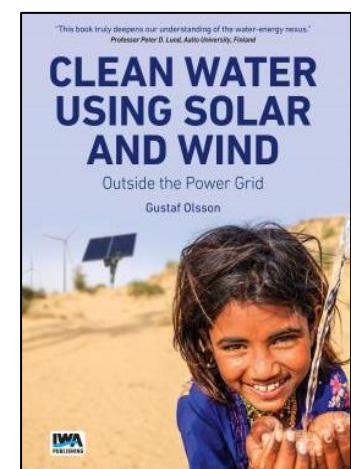
September 2018 • 210 pages • Paperback

IWA Members price: £ 38.00 / US\$ 57.00 / € 48.00

Available as an Open Access ePDF

<https://www.iwapublishing.com/books/9781780409436/clean-water-using-solar-and-wind-outside-power-grid>

Solar photo-voltaic and wind offer to bring both clean energy and clean water to remote regions and peri-urban areas outside conventional electric grids. One out of seven people has no home electricity available for light, cooking and pumps to purify or re-use water. Off-grid systems are scalable to any size the renewable energy cost development can make electric power affordable for the poorest. This book aims to show how clean water and clean energy are reachable for all while contributing to both a better climate and a healthier life.



Selected journal papers

Spatial distribution of physico-chemical parameters for groundwater quality evaluation in a part of Satluj River Basin, India

Akshay Kumar Chaudhry, Kamal Kumar, Mohammad Afaq Alam
Water Supply

<https://doi.org/10.2166/ws.2019.015>

Nitrate removal from groundwater: a review of natural and engineered processes

Solomon K. M. Huno, Eldon R. Rene, Eric D. van Hullebusch, Ajit P. Annachhatre
Journal of Water Supply: Research and Technology – AQUA
<https://doi.org/10.2166/aqua.2018.194>

Comparison of the Soil Environment Conservation Act and the Groundwater Act in the Republic of Korea

(OPEN ACCESS)

Minah Kim, Heejung Kim
Water Policy
<https://doi.org/10.2166/wp.2018.200>



Large diameter hand-dug wells in South Africa

Modreck Gomo, Yolanda Kotzé, Danie Vermeulen
Water Policy
<https://doi.org/10.2166/wp.2018.278>

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WRITE TO US!

The Newsletter is an opportunity to share information: points of view; policy developments; research; activities and events; worldwide. If you have an interesting project, comments, or are planning a conference or workshop, send it to us, including contact point for more information.

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