

# The Water Herald

Learn from your peers

Volume 4, Special Issue 1, July - September 2012

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**Special Issue**

*on the*  
**INTERNATIONAL WATER  
ASSOCIATION (IWA)**

**Water is Life**

**Sanitation is Health**

*'The Customer is the reason we exist'*







# Message

## From the Managing Director

Dear Readers,

In this day and age, the key to the continual success of organisations is to combine synergies, forge meaningful partnerships and/or memberships that catapult them to greater heights in a bid to improving service delivery. These combined synergies help organisations – especially utility companies like National Water and Sewerage Corporation (NWSC) – to jointly deliberate upon and tackle all seemingly insurmountable local and regional water sectoral challenges. That's why NWSC decided to create a steady relationship with the International Water Association (IWA). NWSC is a corporate member within the IWA network.

As you are already aware, IWA is a highly visible global reference point for water professionals, spanning the continuum between research and practice, and



**Eng Alex Gisagara, Ag MD–NWSC**

covering all facets of the water cycle. Through her 10,000 global network of members and experts in research, practice, regulation, consulting and manufacturing, IWA is in better position than any other organization to help water professionals find innovative, pragmatic and sustainable research-tested solutions to challenging global water needs.

The IWA network provides an opportunity for members and partners to establish dialogues and create new opportunities to innovate across a range of issues linked to research, development, SME's, and water and sanitation service delivery in lower and middle income countries (LAMICs). The IWA membership network is structured to promote multi-level collaboration among its diverse groups, and to share knowledge benefits on water science, innovative research and management worldwide.

IWA's strength particularly lies in the professional geographic diversity of its membership – a global mosaic of national, corporate and individual membership communities. It helps like-minded peers, especially researchers, to make the right connections at the right time, by sharing and deliberating upon their cutting-edge innovative research findings and practices; that allow the water sector to shape their future.

We at NWSC cherish our fruitful collaboration with IWA, and this special issue of the Water Herald is a clear testimony to this fact!

Wish you pleasant reading!



## Editor's

## Note



Dear Readers,

In our quest for continual improvement and innovation towards better water and sanitation service delivery, the National Water and Sewerage Corporation (NWSC) has endeavoured to forge links with highly visible organisations and individuals that matter – within the global water sector.

Over the years, NWSC has forged a steady relationship with the International Water Association (IWA). NWSC is a corporate member in the IWA network. Without doubt, IWA is one of those organisations with global visibility among water professionals. You have heard about IWA or even attended one of their events, but what exactly do they do and who are they? Well, for those who love acronyms and simplicity, IWA is an inspiring and ambitious “PLAN” in the global water sector. And PLAN stands for Partner, Leader, Authority and Network. The million dollar question – how do they execute and roll-out this plan?

The challenges in the global water sector are numerous, and the statistics are towering and un-questionably staggering. This year alone, the global populace hit the seven billion mark, and by 2050, we expect to probably have nine billion people. Will the IWA global water plan significantly play a part in delivering the required positive results?

In a nutshell, IWA's strategic intent is to be the preferred partner among respected global organisations, a thought leader in the field, a respected authority and the global network for water professionals. IWA, through her 10,000 global network of members and experts in research, practice, policy, and manufacturing; are in better position than any other organization to help water professionals find innovative, pragmatic and sustainable solutions to challenging global water needs.

IWA's strength lies in the convergence power during their global events, coupled with professional geographic diversity of the membership – a global mosaic of national, corporate and individual membership communities.

For about three months, I had the privilege of working with the IWA Team, at their Global Operations Offices (GOO) in The Hague, The Netherlands – under the NWSC–IWA staff secondment arrangement. During my tenure there – like a game spectator and temporal team mate – I was able to have a general bird's eye view of IWA's operations. It was such a wonderful portal for those who enjoy professional “gossip.”

Within the pages of this special issue on IWA – for the period July–September 2012 – it's my sincere conviction that you will get some understanding on how IWA partly executes their plan. And thereafter, objectively judge whether it's ambitious enough, if it could work for you, and how you could possibly be a player towards fulfilling the plan.

Enjoy the professional gossip!





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# IMPERATIVES FOR URBAN WATER PROFESSIONALS ON THE PATHWAY TO 2050:

**Adapting to rapidly changing conditions on a crowded planet**



 by Paul Reiter  
Executive Director

## I. The World in 2050

2. Billion people (~145,000 per day) Growth in world's population between 2010 and 2050 90% - Estimated share of population growth in developing countries 80-90% - Approximate share of population growth in urban areas 2/3 vs 1/3- Share of countries with water scarcity: 2050 vs. 2000

**L**et's begin with the bottom line: the manner in which water is produced, used and returned to the environment will need to be substantially different in the next 40 years, compared to the previous century, if the well being of the planet and its human population is to be assured.

Focusing specifically on the urban dimension of this challenge, as we begin the "second half" of urbanization of the planet (2009 marked the time when 50% of population was urbanized), many would conclude that we are at a tipping point in terms of upcoming urban water needs versus resource availability. Accordingly, the sources and management of water for cities will of necessity change a lot – dramatically in some cases. Scarcity of locally available water supplies, competition for water with agriculture and energy, climate change impacts, rising energy prices and the need to mitigate for greenhouse gas emissions, environmental restoration and basic economics in combination will require cities to use water far more efficiently compared with today's systems – perhaps by a factor of two.

I believe that we are capable of doubling the efficiency of urban water use, at least in developed countries, through a combination of high levels of conservation, water reuse enabled through membrane technology, and energy and nutrient recovery. Success will be found through a combination of measures within the urban area, together with strategic trades of water

with agriculture and energy. For example, the city might gain additional water by investing in irrigation efficiency in adjacent farmlands, while returning reclaimed water and nutrients to agriculture to further expand crop production.

In developing countries where 80-90% of future urban growth is estimated to occur through 2050, we have the twin challenge of building highly efficient water systems capable of absorbing growth in population and rising per capita use, and doing it at a much lower per capita cost than that of conventional systems that are found in the US and Europe today. While this may be possible in emerging middle income economies like China, Turkey and Brazil, we are obviously going to need a portfolio of approaches to match the range of physical and economic circumstances in lower income countries.

Beyond the economic challenges are cultural ones. Water engineers are a conservative lot. There are few rewards for the bold innovation required in the future and many penalties for things going badly. In this environment, significant changes in thinking and the development of truly innovative solutions will require conscious strategies that permit and reward controlled experimentation. Finally, because the developed countries are fairly or unfairly held up as role models when it comes to water systems, the change we need to see in how water is used and systems are built will need to include examples from



developed countries. .

In these matters, time is not on our side. If one considers that the key elements of urban water systems – networks, treatment plants, pumping stations – are by design or circumstance in place for at least 50 years (sometimes 100 years), it is evident that we urgently need to think about what the water systems of the future looks like, and begin implementing the basic design principles beginning now.

## II. CITIES AND WATER SYSTEMS OF THE FUTURE

If we are to produce a step change in water system design, how do we start the process of thinking outside the box that has shaped conventional design in developed countries and has more or less been universally adapted as the desired solution for water supply and sanitation?

And in lower income countries, where peri-urban slums currently dominate the urban water challenges, can we challenge ourselves to think far outside the box? Can we think about affordable, incremental steps that over the long-run lead to a growth in drinking water and sanitation service levels commensurate with the community's ability to pay?

These questions underlie the need to think creatively in the near future. Working through the International Water Association, and its Cities of the Future Program, leading water professionals alongside city planners have been working hard on the question of how cities can achieve water security in the context of rising demands and increasingly scarce water resources on the path to 2050.

While working "bottom up" on the question such as how density affects consumption, how reuse could be facilitated through different treatment and network modalities, and how to build more resilient systems and networks capable of adaptation to changing conditions, they have been assembling case studies of new and innovative approaches to urban water management.

Cases such as Xing Dao, China, reveal the potential as well as some of the difficulties in rethinking the urban water nexus. In Xing Dao, research engineers from Germany and China have teamed up to develop a full scale demonstration of the highly efficient water system of the future. Situated at the edge of the city in an area designated for the next round of development, they are working in a greenfield circumstance where they could start from scratch. In designing an integrated system for water treatment, wastewater treatment, water reuse and energy production, they chose a service area that was "as small as possible but as big as necessary".

This led the team to what they call a "semi-centralized" system design, optimally serving 20,000 – 70,000 people and in their case, about 50,000. The service area or "cluster" is centered around the integrated treatment plant, thereby minimizing network costs and energy while facilitating the repeated household-level reuse of gray water. They anticipate a 50% reduction in water use, significantly lower network costs and the production of energy from the plant that is twice the plants own energy requirements.

Clearly, examples like this of which there are several in China, constitute water systems of the future. They exemplify innovation and the potential for increased efficiency that will be required to meet the challenges leading to 2050. But these kind of innovations are only possible if they are co-designed alongside the buildings, road and parks which make up traditional city planning.

Israel provides another useful case in considering how to achieve water security – in their case for both cities and agriculture Israel. Historically dependent on contested water from the Jordan River, Israel decided to use seawater desalination and reuse in combination as the principle source of new water. In less than 10 years, five desalination plants were built along the coast – plants that supply water to the major urban centers.

Once employed for urban uses and subsequently collected, the urban wastewater is highly treated and transported south for agricultural use. Israel currently reuses 70% of its urban wastewater and will soon reach a reuse level of 95%. Through efficient irrigation and reuse, Israel has one of the lowest per capita uses of water in the world and is one of the leaders in innovative water technologies.

Melbourne, Australia provides a third case where climate-change induced drought dramatically affected the Murray Darling River system, the agricultural sector including high value orchard crops and vineyards, and the urban settlements in and around Melbourne. A comprehensive program of action has included high levels of urban and agricultural water conservation, water transfers between all water uses, the addition of major desalination and reuse capabilities in Melbourne, revisions to urban design and pilot testing of in-situ water facilities in newly built suburbs. In the end, multi-level comprehensive planning and integration were required to address Melbourne's problems.

Xing Dao, Israel, and Melbourne are but three of a growing list of cities and countries that are fundamentally rethinking water in the city/region/country in terms of efficiency, urban design and urban security. This list includes Las Vegas in the US, Perth



and Gold Coast in Australia, Tenerife and Madrid in Spain, and Xian and Tianjin in China.

Through these case studies and analytical work involving a number of task groups, it is evident that the design of highly efficient water systems within the city – and their linkages to other users of water outside the city – can only be achieved through integrating water system design with city and regional planning.

Also evident is the fact that the traditional objectives for water system design in the city – capacity, health and safety – need to be augmented with some new and important objectives. They include:

- High levels of water and water-related energy use efficiency at the building level
- The capability to reuse water safely and repeatedly
- Wastewater treatment processes that produce energy and recover nutrients
- Smart networks that permit intra-urban reuse and minimize life cycle costs
- Resilience and adaptability in overall system design

The adoption and implementation of these objectives will need to be widespread by 2050.

Finally, work to date through the IWA Cities of the Future program has revealed the enormity of the

challenge of applying these concepts to the yet-to-be built water systems in the lower half of the income scale of developing countries. The basic question is whether it is possible to design highly efficient yet low cost systems that can be implemented incrementally, in line with increases in the community's ability to pay over time.

### III. THE CHOICE BEFORE US

Looking at the challenges ahead, one could conclude that we are facing a very dark future. I believe instead that we face a basic choice: we can continue down the lane marked "business as usual" and watch a year by year decline in health and well being of all but the wealthy, marked by increasing water pollution and growing shortages of all things related to water.

Alternatively, we can face up to our challenges and create a fundamentally brighter future by dramatically increasing the efficiency with which we use water in all sectors. Paradigm shifts in urban water management of the nature described above will enhance the water and economic security of cities and could, through innovation, reduce both the capital and operating of urban water systems thereby lowering the barriers to entry in developing countries.

The choice is ours.



International  
Water Association

## Water Safety Conference

In Africa, the region most in need of accelerating improvements to water supply, we have the ideal location to hold the third edition of the **International Water Safety conference**.

The event will bring together global practitioners, researchers and decision makers to discuss best practices and emerging trends for improving the safety of global water supplies.

**Early Bird Registration Opens  
1st of June 2012**

**13- 15 November 2012  
NWSC International Resource Centre  
Kampala, Uganda**

[www.iwa-watersafety2012.org](http://www.iwa-watersafety2012.org)



organized by:



International  
Water Association



National Water and  
Sewerage Corporation

co-sponsored by:



World Health  
Organization





## with **MR PIET JONKER** on the Management of Dunea Water, Den Haag–Netherlands

by **Martin Kalibbala**

Mr Piet Jonker – former Deputy-Mayor of Amsterdam and Managing Director of Dunea Water of The Hague, Netherlands – leads a vibrant team of professionals that manages the Dutch public-owned water utility company. Below are excerpts of his interview with the Editor-in-Chief on his wealth of experiences in running a water utility business in the developed world, especially in the wake of the global economic meltdown. He also offers some spot-on and sound advice to utility managers hailing from Low and Middle Income Countries (LAMICs).



**Q For someone who has never heard of Dunea Water, how precisely would you describe it? Please briefly describe Dunea Water?**

**A** Dunea is a Dutch public-owned water utility company. Our service area is located on the Western part of the South-Holland province, around the City of The Hague. We serve 1.2 million people with 75 million m<sup>3</sup> of drinking water annually. Our water intake is the (international) river Meuse. All our water is first artificially recharged in the dune area next to the North Sea. Nature conservation and facilitating recreation in the dune area is the second function of Dunea, receiving about 1 million visitors annually.

Dunea is modelled as a private business with a two-tier board according to Dutch corporate governance. The eighteen municipalities in our service area are the shareholders of Dunea, holding shares in proportion to the number of their inhabitants. Dunea does not pay out dividends to its shareholders; all profits are retained and used for investments. Dunea has a Consumer Advisory Board, a Nature Conservation Advisory Board and a Recreation Advisory Board, helping Dunea to fulfil its tasks in the best public interests.

**Q What are some of the tangible managerial and economic gains during your tenure as CEO of Dunea?**

**A** Dunea was formed by merging a large number of smaller city departments into a large autonomous utility. It took several steps to replace the former public sector, rather bureaucratic procedures and regional differences in work practices – by modern management principles and operational excellence.

The quality of both our products and services has improved considerably, while our running costs have come down. The cost of producing a cubic metre of drinking water expressed in euros in 2012 is the

same as that of 1997, which implies that in real terms (inflation!), drinking water has become much cheaper.

**Q Kindly give a snap shot of your water tariff. How much is it? Is it cost recovery in nature and is it periodically indexable to cater for inflation, etc? What is the customer perception in this regard?**

**A** Our drinking water tariff consists of a fixed amount and an amount per m<sup>3</sup> consumed. The fixed amount is about one third of the total revenue. Including the fixed amount – divided by average consumption per connection – the price charged is 1.58 per m<sup>3</sup>. This figure includes about 30 per cent of taxes (value-added tax, drinking water tax, groundwater tax, groundwater levy, city taxes).

For new water connections, we charge a connection fee. Consumer surveys have shown that most people are unaware of the actual water price, and are more interested in security of supply and quality than in the price. The annual shareholders' meetings deliberate upon and decide on the water tariffs and budget for the proceeding year. After several years of declining tariffs, we have now raised our tariff twice, both times less than inflation.

**Q During the IWA Staff visit at Dunea on 20.06.2012, you mentioned that there has been a steady decline in water usage and demand among your consumers. Why is this so and are stakeholders happy? And how do you cope with this decline?**

**A** Since 2000, the per capita consumption of drinking water in the Netherlands has declined. The main cause is the reduced

water consumption of washing machines and dishwashers, caused by innovations aimed at reducing the energy consumption of these household appliances. The water consumption of a washing machine has been reduced by 40 per cent. This means that every time a household replaces its old washing machine, it reduces its water consumption.

The total supply of drinking water by Dunea has remained constant because the reduction in per capital consumption was balanced by an increase in the population in our service area. The combined effect is not problematic; we only have to postpone our capacity expansion projects until the replacement effect has worked out.

**Q** I understand that you are a keen advocate of public-owned utilities. Is that right? If so, why in this era when most people believe that utilities should adopt private sector approaches to become more efficient?

**A** Drinking water supply is a natural monopoly: the costs of having a network are sub-additive, so you will always end up with only one supplier in an area. Supplying high quality drinking water is also of utmost importance for promoting public health. So, there are good reasons for having a public water supply, and the overwhelming majority of water supplies worldwide are public indeed.

On the other hand, the disadvantages of having a government agency delivering services to the public are also well known: reduced incentives for customer orientation, efficiency and innovation, bureaucratic decision making and sometimes shortage of funds for investments due to restraints on government budgets. The Dutch model of public-owned but privately-run drinking water companies tries to make the best of both worlds. The company is run as a private business, with a focus on operational excellence and quality improvement, but at the same time trying to maximize corporate social responsibility. Access to the capital market is no problem. The results obtained in the last two decades show that this "third way" between public and private can deliver its promises.

Unfortunately, of recent there is a growing tendency to reinforce regulation. I am afraid that this will have a negative effect on running water utility businesses. Regulation takes responsibility away from the people who actually deliver the services. It is organised distrust, mainly aimed at meeting short-term, instead of long-term results. Go to the UK to observe what this means. I do not understand

why people are trying to change a "winning team." Since Dutch water utilities are improving quality and increasing efficiency, why bother?

**Q** What does your wealth of experience as deputy-mayor of Amsterdam bring on the table – as far as managing utility business is concerned?

**A** For twelve years, I was a deputy-mayor of the city of Amsterdam. This gave me a lot of experience on the dos and don'ts of organisations operating in the public domain. Public relations (PR) is a main part of my job, from working with government departments, to city councillors, from European regulators to nature conservationists. Others have to hire consultants for PR issues, but I can do most of it myself.

**Q** Dunea has embarked on key environmental conservation projects (ECPs) in the past. Please describe these ECPs and their importance to the Dunea business.

**A** Nature conservation is an essential part of the work of Dunea. Our dune area is Natural 2000-designated area, which means that it is considered to be of European relevance. We have done several regeneration projects compensating for both the influence of the artificial recharge of groundwater by pre-treated river water and the nitrogen deposition from the caused by the combined influence of agriculture, industry and traffic in this densely populated part of the Netherlands.

The expertise of Dunea in regenerating is widely recognised. Dunea is also pursuing an active energy conservation policy: from increasing energy efficiency in our pumping to using electrical cars, from buying only sustainably produced electricity to installing solar energy panels.

**Q** What is the role of Dunea in global water partnerships (GWOPA) and on the international scene? And why is this important for your management team?

**A** Our experience is that the most important know-how of Dunea, how to manage a drinking water utility with operational excellence, is in demand. At the moment we assist a Tanzanian water company, not only to make use of recently acquired donor-funded new equipment but also to promote operational excellence company-wide. This kind of know-how is not available from consultancy firms or development agencies. Most of the costs Dunea makes for its assistance are paid for by the European Union, a small part is paid by Dunea itself.

We see this partly as our corporate social responsibility and partly as personnel management, as international experiences promote worker motivation and this makes Dunea an attractive employer for the young people. We are expanding our international activities,



mainly aiming at reducing UAW, because this can be done on a full-cost recovery basis. Customer surveys show that these international activities have support from our customers. Government regulations stipulate that net costs of international activities must be lower than 1 per cent of annual turnover. Dunea stays well below this threshold.

**Q** What are some of the challenges of your management team and how are you addressing and/or mitigating them?

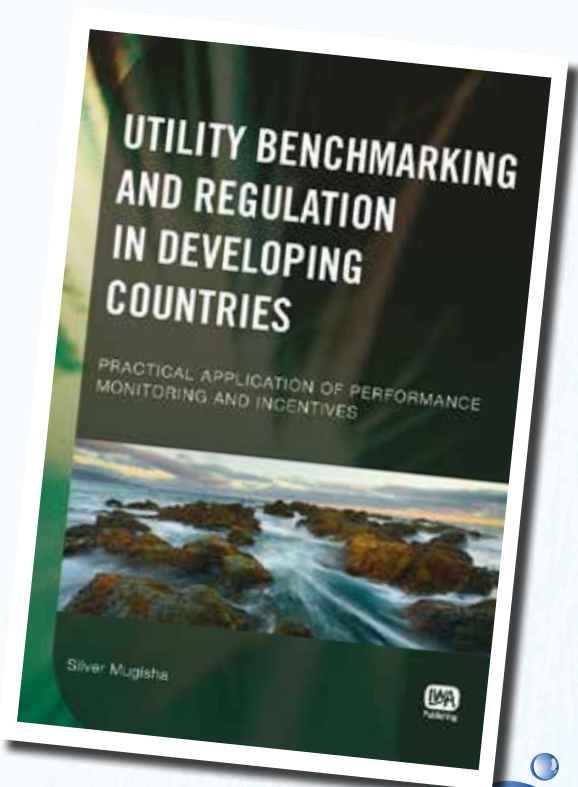
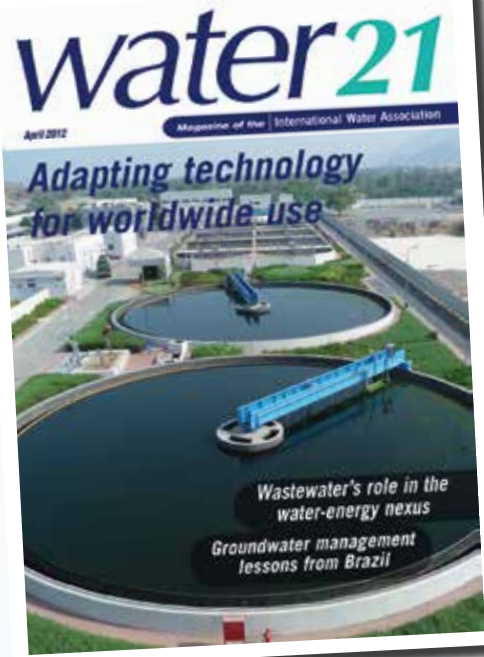
**A** Asset management is key for the future of Dunea. Our network and production facilities are ageing, and the pressure to keep costs down forces us to replace ageing infrastructure in a smart way, balancing security of supply and replacement costs. Running a modern business means making optimal use of modern information and communication technology.

Information management has become a considerable task. And last but not least, our main asset is customer confidence in the quality of our drinking water. For us, the main threat to consumer confidence is the so-called emerging substances: the remains of the increased consumption of human and animal drugs and pesticides. We are considering adding advanced oxidation as the eighth treatment step to increase the barrier against these emerging substances.

**Q** I happen to hail from some utility business in the LAMIC region, whose management landscape, customer base, challenges, turnover, etc; is a fraction of Dunea. As a highly experienced CEO from the EU, what is your advice to utility managers from the LAMIC regions, especially in the wake of the global economic meltdown?

**A** Reduce the un-accounted for water (UAW) as it is a drain on the funds you need for improving the quality of your equipment, ICT and personnel. There is no good substitute for full-cost recovery in order to become a well-run, sustainable utility. Raising tariffs will always meet objections when you are a monopolist. So first try to raise your revenue basis by reducing the UAW.

Reducing the UAW will also have a beneficial effect on the customer orientation in your organisation (why do some people don't get a bill, why are some customers not paying?) and on quality (leakage reduction means better asset management, and leakage reduction also improves the microbiological quality of the drinking water).





# Pictorial # 1

18<sup>th</sup> – 22<sup>nd</sup> June 2012

## International Water Association Staff Week









# WATER SAFETY CONFERENCE

## Improving Service Delivery and Protecting Public Health

Kampala Uganda 13–15 November 2012



by Kirsten de Vette

The International Water Safety Conference that will be hosted in Kampala Uganda, is the third edition of International Water Association (IWA) and World Health Organisation (WHO) conference series, that brings together global practitioners, researchers and decision makers to discuss best practices and emerging trends for improving the safety of global water supplies.

Securing safe water supplies remains a top priority for water and public health professionals. Earlier this year, the UN announced that the drinking water component of MDG Target 7 had been met, however, there remains a significant proportion of the global population who do not receive safe drinking water. Therefore there is a need concerted efforts towards meeting the growing demand for safe water.

One key approach to improving water supply management is Water Safety Plans that stepped away from end of pipe standard setting approach to protect drinking water quality. In 2004, Water Safety Plans were taken up in both the 3rd revision of the WHO guidelines on drinking-water quality, and the IWA's Bonn Charter for Safe Drinking Water documents that described a framework for safe drinking-water in which the importance of establishing health based targets, developing Water Safety Plans and undertaking independent surveillance were emphasized.

Water Safety Plans (WSPs) provide water utilities with

*With the increased adoption and institutionalization of WSP worldwide, there is hope that more and more communities will get sustainable access to safe drinking water” Silver Mugisha, NWSC.*

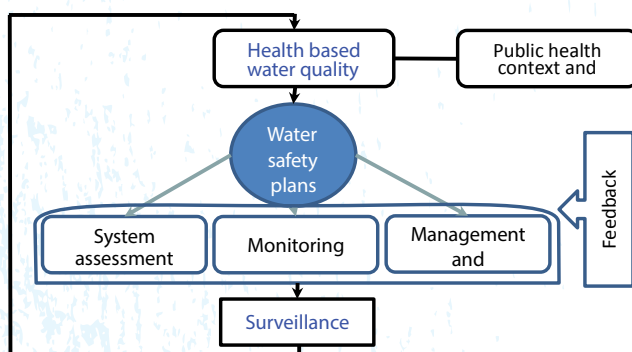
Since 2004 IWA and WHO have widely been promoting and supporting the adoption of the framework. The organisations jointly produced a WSP manual and launched the first edition of a series of Water Safety Plan Conferences.

### Previous IWA-WHO Water Safety Conferences.

The first IWA-WHO Water Safety Conference in Lisbon, Portugal in 2008. This event was established to share experiences, mainly covering the risk assessment/ risk management of water supplies, supported with a few examples of WSP case studies.

The second IWA-WHO Water Safety Conference was held in Kuching, Malaysia in 2010, broadening the scope and topics, to include Household level interventions, community managed supplies and many more case studies on WSP implementation.

### IWA-WHO Water Safety Conference 2012



a risk-based, preventative approach to managing water supplies with the cooperation of other key stakeholders. Successful implementation of WSPs can improve drinking water quality, accrue operational efficiencies and provide a robust framework to better target more sustainable capital investments.

*“The benefits of WSP implementation go beyond quality assurance and safety to improved system maintenance and sustainability.*





This year's third edition of the IWA-WHO Water Safety Conference will be hosted by National Water and Sewerage Company in Kampala Uganda. Sub-Saharan African is one of the regions, most in need of accelerating improvements in water supply, particularly considering the significant population growth, rapid urbanisation, informal land use and climate change. In Africa, we thus have the ideal location to reflect on lessons learned and drive implementation of WSPs that are accruing tangible benefits.

The 85 papers received represent all regions from the world formed a solid basis for a streamlined preliminary programme surrounding three main themes.

### **Managing Water Supplies for Communities and Households**

Initially, when Water Safety Plans were being introduced there was a belief that this approach was just for larger utilities. This conference programme highlights this is not the case anymore, and presents household water treatment and safe storage, from treatment techniques to national approaches to up-scale HWTS, as a critical part of the management of the supply chain. Community engagement is critical as these are (potential) consumers of the water supply, typically those that can affect the water supply or the actual managers of community based systems. All of these items will be covered within this theme.

### **Water Safety Planning**

Water Safety plans have to be adapted to fit specific context, whether this is in terms of size or whether it is affected by the institutional role of the organisation starting the WSP. There are various approaches used to promote WSP implementation in small towns, peri-urban towns or within informal settlement that will be shared. Additionally, risk assessment and management approaches as well as the

monitoring and evaluation of WSP performance should be covered within this theme. Innovative tools that have been designed to facilitate improved WSP development and implementation are presented. These tools support planning practices, improved management information systems, and guide for specific contexts.

### **Legislative and Institutional Support for Safe Water**

It is important that appropriate regulatory and policy instruments are made available to empower institutions to fulfil their obligations. This includes mandates for water service providers, enforcement powers for regulators and available finance or credit for infrastructural improvements. Regulatory approaches from various regions will be shown, including those that have taken up risk management approaches. Additionally, institutional support through capacity development is required when changing the drinking water safety management approach. There will be presentations on some of these approaches. In plenary, there will be a focus on what it takes to implement the safe drinking water component of the human right, with perspectives of government (state and local), water service providers, consumer groups and other key stakeholders.

**The IWA-WHO Water Safety conference is expecting over 300 international delegates to attend.** Given the integrated nature of managing safe water, the conference will attract a wide variety of water professionals: from operational staff of water suppliers to social scientists; from government administrators to source protection specialists. The conference aims to provide unique opportunities for delegates to interact with professionals across disciplines and regions to share their experiences and ideas and discuss common challenges and appropriate solutions.

[www.iwa-watersafety2012.org](http://www.iwa-watersafety2012.org) – to read more about the event, download the preliminary programme and register.



International Water Association

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organized by:



International Water Association



National Water and Sewerage Corporation

co-sponsored by:



World Health Organization





 by Tom Williams

# IWA IN LOW AND MIDDLE INCOME COUNTRIES:

## *A Global Network Delivering Regional Solutions*

IWA Vision 2020: "...by the year 2020, 50 % of IWA's membership is from low and middle income countries driving a set of activities deployed in region-specific contexts..."

Over 50 % of the 130 countries where IWA has membership representation are low or middle income countries (LAMIC), reflecting a broad base for membership engagement in developing regions. However, only 25 % of IWA members are from LAMIC indicating that greater efforts are needed to increase IWA presence, engagement and impact where it is needed most. It is for this reason that IWA is embarking on Vision 2020: "a target of having 50 % of its membership in low and middle income countries (LAMIC) by 2020 driving a set of activities deployed in region-specific contexts."

The most significant development challenges facing the WATSAN sector are in LAMIC, which in turn creates opportunities for innovation, greater knowledge and expertise exchange and sector growth. With the need to meet these challenges becoming increasingly acute – particularly in respect to anticipated urban population growth in these regions – the application of effective practical solutions at scale needs to be accelerated. In this context IWA has an important role to play through its extended network – including members, partners and participants – in brokering expertise, facilitating knowledge exchange and enabling change.

To accelerate global uptake of our outreach programmes, IWA

has established regional offices in Singapore, Beijing, Bucharest and Nairobi. They serve as the regional hubs for coordinating IWA knowledge exchange activities, enabling us to connect more effectively with our members, stake holders and the water community and assist in the development of sustainable water management in the region.

Through IWA's network of members and partners the Association mobilises expertise, generates knowledge and stimulates action to support the attainment of the Millennium Development Goals. Below are three examples of how IWA does this:

### **Delivering Safe Water and Improving Health in Cities across East Africa**

The United States Environment Protection Agency (USEPA) funded project Water Safety Plan implementation in EastAfrica is a five year programme providing support to urban water suppliers to implement WSPs ultimately leading to improved water quality and better public health. In cooperation with international, regional and national partners, including the World Health Organisation (WHO), NETWAS International and a network of urban water suppliers, the project provides training, facilitates partnerships between utilities and provides ongoing technical support to continuous improvements in water quality through the implementation

of WSPs. Furthermore, IWA is partnering with the Aquaya Institute on the Bill and Melinda Gates Foundation funded project called: *Monitoring for Safe Water*, which promotes comprehensive water testing for improved water quality management across sub-Saharan Africa. For further information on both of these projects, please visit: [www.wsportal.org/africa](http://www.wsportal.org/africa)

### **Assessing the human resource requirements to achieve water and sanitation related MDG targets and full service coverage**

The Human Resource Capacity Gaps Study funded by the Australian Government Overseas Aid Department (AusAID), Department for International Development UK (DfID) and the United States Agency for International Development (USAID) aims to assess the human resource requirements to achieve water and sanitation related MDG targets and full service coverage. The work focusses on identifying shortages and gaps where public sector institutions, non-governmental organisations and private companies involved in service provision lack sufficient staff and/or expertise necessary to attain these targets. Data collected for this study goes some way to determining the global human resource requirements in the drinking water and sanitation sector. Addressing these requirements is key to both accelerating progress to meet the MDG target for drinking water



and sanitation and for achieving the ultimate goal of universal coverage. For further information: [www.iwahq.org/hrcapacity](http://www.iwahq.org/hrcapacity)

### Connecting over 300,000 people to take action and protect their livelihoods

In 2011 the World Water Monitoring Challenge distributed 19,400 water quality test kits to 338,959 participants in 81 countries. The primary goal of World Water Monitoring Challenge is to educate and engage citizens in the protection of the world's water resources. Many people are unaware of the impact their behaviors have on water quality. Conducting simple monitoring tests teaches participants about some of the most common indicators of water health and encourages further participation in more formal citizen monitoring

efforts. For further information: [www.worldwatermonitoringday.org](http://www.worldwatermonitoringday.org)

Key activities to engage with members and partners in low and middle income countries include:

### Make sure that your project is recognised as a winner in The Project Innovation Awards – Development

This awards programme aims to recognise and celebrate excellence and innovation in water and sanitation projects in developing countries. The awards are divided into two categories: Drinking Water Supply and Sanitation and Wastewater and three sub-categories: applied research, software and hardware and are presented biennially. See [www.iwa-pia.org](http://www.iwa-pia.org) for further details.

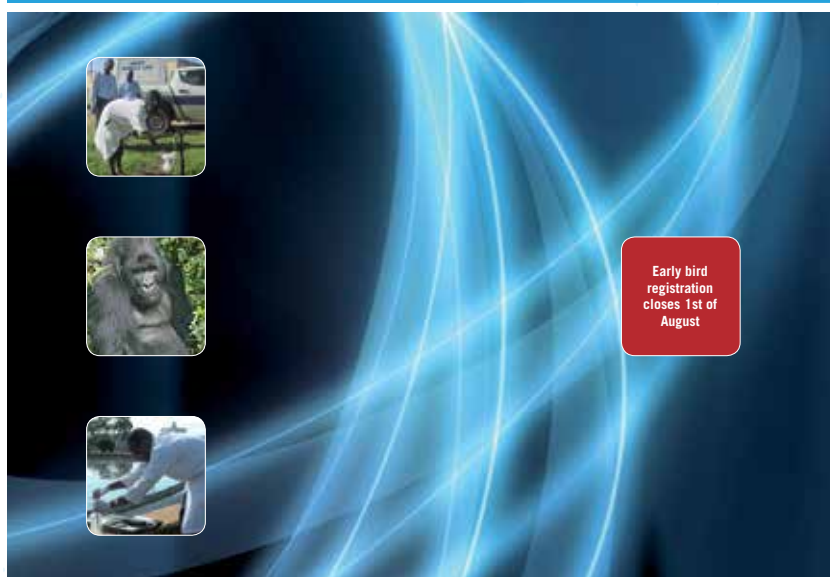
### Connect with peers and learn about solutions that work at the IWA Development Congress

This biennial event will be organised for the third time in October 2013, taking place in Nairobi, Kenya. The Congress series seeks to find pioneering and innovative solutions for development as low and middle income countries face unprecedented challenges to supply water and sanitation services to their citizens and manage urban waters wisely. The Congress aims to accelerate the uptake of these innovations to have impact at scale. It does so by bringing together utilities, NGOs, technology suppliers, decision makers, scientists and engineers to share, debate and learn about pioneering solutions to urban water challenges. See [www.iwa2013nairobi.org](http://www.iwa2013nairobi.org) for further details.



## Advance Programme and Registration WATER SAFETY CONFERENCE

Improving Service Delivery  
and Protecting Public Health




supported by:



13-15 November 2012  
Kampala, Uganda  
[www.iwa-watersafety2012.org](http://www.iwa-watersafety2012.org)

# Young Professional Voices from Africa



 by **Chloe Menhinick**

I can honestly say that young people have found the YWP programme immensely supportive in career development, networking, technical skills training, but perhaps more importantly, having a supportive network of individuals who are going through the same challenges that young people face when developing their careers. This is oftentimes the non-technical challenges such as networking at conferences, or finding a mentor, or sharing the challenges of being a young woman professional in a still largely male-dominated sector. Through the YWP programme these kinds of formal but also informal lessons are shared and help to grow professionals that are equipped to deal with the technical but also non-technical challenges that the water sector throws before us. Even professionals who work in other sectors have come to us because that kind of support is not provided in their respective sectors.” **Dr. Inga Jacobs (PhD, MA)** (IWA YWP President 2010-2012) Research Manager, KSA 5: Knowledge Management, Water Research Commission

As a YWP, IWA membership and participation at IWA events including international conferences, provide me with access to one of the largest network of water professionals across the globe. Since my membership with IWA my networking skills have improved significantly and my professional career has been boosted in my home country, Canada, and abroad. The connections built during IWA events help me to share the results of our team's research with scientists and industry leaders from different countries including Australia, USA, UK, Malaysia, Philippines, China, Taiwan, Mexico, Austria, South Africa, Uganda and Hungary.

IWA, also provides an exceptional platform for YWPs to communicate and collaborate via YWP exceptional programme.

**Dr. Arash Zamyadi, B.Sc., M.Sc., Ph.D.** NSERC Industrial Chair on Drinking Water  
Département de génie civil/Civil

## IWA's YWPs speak about their experiences of being a member of the International Water Association

Engineering Department École Polytechnique de Montréal

“My IWA membership provides priceless opportunities to network with water professionals by attending prestigious conferences and strategic programmes at discounted rates! The Water 21 magazine keeps me updated with the latest news of the dynamic development within the water sector. As part of the YWP programme, I learnt a lot from the senior experts on opportunities for career development. It is fantastic being part of the IWA ecosystem!”

**Dr. Norhayati Abdullah** Department of Industrial Biotechnology, Faculty of Biosciences and Bioengineering

### Belladonah's Testimonial on the IWA Membership

I joined IWA in January 2010 at the first Southern African IWA-WISA YWP conference which took place at the CSIR, SA. Being an IWA member ushered me into the global platform on water and related issues. The membership comes with regular receipt of the Water 21 magazine. The magazine shares a lot of information on the current trends on water issues and has often given me an overview of what's happening in my sector internationally.

The most significant change in my career was when I became a committee member representing Southern Africa for the IWA-YWP committee. Being a member of IWA-YWP made me to be part of the mailing list thus I was able to get the information to apply for the opportunity. Since I became a committee member, my passion for the sector has grown immensely. I am eager to contribute to development of the sector. IWA membership has also enabled me to form networks from the entire world. I will never forget the opportunity I got through IWA membership to travel to Austria for a meeting and workshop as the next generation water drivers (IWA-YWP). I now have friends in the UK, Austria, Canada, Philippines, Malaysia, Uganda, Mexico, Hungary and South Africa! Thanks to IWA where one can find a best water friend!



International  
Water Association



### Connect to the Network

*Are you looking to create innovative, pragmatic and sustainable solutions to challenging global water needs? Do you want to be a leader in your field or expand your capacity to collaborate with industry experts?*

Make sure you stay connected as a member and discover the full range of benefits and opportunities. Visit [www.iwahq.org](http://www.iwahq.org) for more information on IWA, its programmes and activities and how to be part of it!

[www.iwahq.org](http://www.iwahq.org)





## 3rd IWA Development Congress & Exhibition



# Join Us in Nairobi

The International Water Association is pleased to announce that the 3rd IWA Development Congress and Exhibition will be held in Nairobi, the capital city of Kenya.

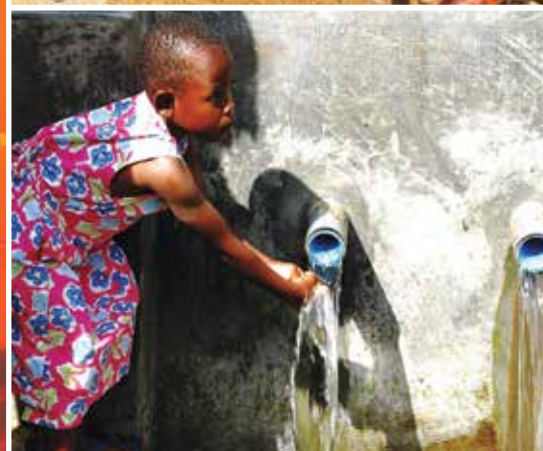
The overarching goal of the IWA Development Congress series is to identify, showcase and debate practical experiences and examples of service provision in developing countries that 'work', and critically, 'work at large scale'. The Congress in Nairobi is therefore explicitly solutions focused, and provides a unique opportunity to signpost best practices, applied research and enabling policies to meet the water and sanitation challenges of today and tomorrow in an increasingly urbanizing world.

This is your invitation to join us in Nairobi as a delegate, strategic partner, trade visitor, presenter, sponsor or exhibitor.

- If you join us in Nairobi as a delegate or trade visitor, you will learn about solutions that will meet the water and sanitation challenges in low and middle-income countries, and network with water and sanitation experts from across the globe. If you wish to present a paper at the Congress, the deadline for abstract submission closes on 30 November 2012.
- If you join us as a strategic partner, you will work with IWA and other organizations to deliver a rich Congress programme and help catalyse urban water transitions through advocacy, capacity building and new frameworks and initiatives.
- If you join us as an exhibitor or sponsor, you are certain to enhance the reputation of your company or institution as a leading player in the global water field. Bookings are being taken now.

Please visit us at the Congress website for more updates and information.

**[www.iwa2013nairobi.org](http://www.iwa2013nairobi.org)**



**14 - 17 October 2013**  
**Nairobi, Kenya**

#### Organisers



International  
Water Association



#### Institutional Partners



#### Contact Information

##### Technical and Scientific Programme

Tom Williams, IWA Regional Group & Programmes Director  
Email: [2013nairobi@iwahq.org](mailto:2013nairobi@iwahq.org)

##### Exhibition

IWA Exhibition Management / Match+  
Email: [info@iwa-exhibitions.com](mailto:info@iwa-exhibitions.com)

##### Sponsorship

Ryan Yuen, IWA Global Events Director  
Email: [2013nairobi@iwahq.org](mailto:2013nairobi@iwahq.org)

##### Congress Secretariat

Catherine Chan, c/o Event Pulses Pte Ltd  
Email: [catherine@eventpulses.com](mailto:catherine@eventpulses.com)



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##### Congress Secretariat

Catherine Chan, c/o Event Pulses Pte Ltd  
Email: [catherine@eventpulses.com](mailto:catherine@eventpulses.com)



# Pictorial # 2

## IWA Extends Offices, Links and Events to Africa





# IWA-Africa Regional Office



 by Sarah Tibatemwa

## Introduction

It is just like yesterday when the IWA Africa Regional Office was established, but it is actually almost four years since this happened. During the four years, we have indeed come a long way, and a lot of exciting events have taken place. The decision to regionalise IWA – towards the end of 2008 – saw the birth of the Africa office, and this following the establishment of the Asia-Pacific Regional Office.

The office finally found a home at the Nairobi ESARO-IUCN Complex off Mukomo road, Nairobi, Kenya. The rationale behind IWA's regionalization was to bring the IWA activities and programs closer to the members and partners, so as to create further relevance of these in the regions. There was also a need to profile IWA more broadly and develop IWA's capacities to support the Africa water sector in moving forward to achieve better and more efficient coverage in water supply and sanitation.

Over the past three years, the IWA Africa Regional Office has substantially increased the IWA profile in the region. As a result, IWA is currently in a better position to take a more active role in assisting the region towards meeting MDG No. 7 on water and sanitation. IWA's tangible presence has increasingly brought the institution closer to the many international, regional and national actors and partners within the Africa water sector.

The successful merger of ESAR and the African Water Association and the hosting of the successful and well attended Water Utility Leaders Forum in Swaziland in 2010, and Uganda in 2011 are a clear illustration of the progress made so far.

*"...The rationale behind IWA's regionalization was to bring the IWA activities and programs closer to the members and partners, so as to create further relevance of these in the regions..."*

## Programmes

In the early days of the IWA Africa Regional Office, the level of IWA membership in the region was very low and there was need to market the network in an effort to build-up and strengthen the membership. In response, there has been a marked growth in all segments of the IWA membership in Africa, and in particular the corporate segment. This was a result of a focused marketing effort based on personal outreach and visits to various countries in the region, collaborative IWA events and conferences and the implementation of some of the IWA signature programmes.

Firmly establishing the IWA Africa Regional Office in Nairobi is expected to open up further opportunities for IWA to team up and collaborate with the diverse set of international, regional and national partners with similar and/or related goals and objectives. Some of the successful programmes in the region have been support to urban utilities, especially the Water Safety plan development and implementation.

This programme has been supported by UN-HABITAT and more recently by the United States Environmental Protection Agency (USEPA). Following the successful introduction of WSP concept to a selected few utility CEOs in Maputo in 2010, training was organised for a number of Anglophone utility operators. This took place at the Rand Water Training Centre in Johannesburg. This was further followed by training for Francophone utilities in Rabat, Morocco towards the end of 2010.

Since those two training events, a number of utilities have initiated development of WSPs. One other related event was the regional WSP workshop held in Nairobi in April 2011. This regional event brought together over 100 delegates that included regulators, policy makers and utility operators from 10 countries. IWA has gone further, and together with other partners (WHO and USEPA), supported NETWAS, a local training and capacity building institution in Nairobi to begin offering WSP courses for water operators.

During the last 3 years, there has been a marked increase in individual organisations and countries participating in the World Water Monitoring Challenge (WWMC – formally called World Water Monitoring Day). The WWMC is an international education and outreach program that builds public awareness and involvement in protecting water resources around the world by engaging citizens to conduct basic monitoring of their local water bodies.



The primary goal of World Water Monitoring Challenge is to educate and engage citizens in the protection of the world's water resources. Many people are unaware of the impact their behaviors have on water quality. The number of participating African countries shot up between 2008 and 2009, an increase of 88 %, while individual organisations went from 47 to over 3,500 the same year.

This was as a result of deliberate marketing of the programme by the Africa office and The Hague desk officer responsible for the programme. The programme has continued to enjoy interest especially from schools. We are now looking forward to being able to market the programme in Francophone Africa. Anybody interested in participating in this programme should contact Frances Lucraft, [frances.lucraft@iwahq.org](mailto:frances.lucraft@iwahq.org) for more information.

### Young Water Professionals

One other point of interest has been the growth in interest of the Young Water Professionals (YWP). There are currently 14 active YWP Chapters spread over six countries so far and many more expected. I am also proud to mention that the Board representative of YWP is from Africa. Those interested in establishing Chapters should get in touch with Frances Lucraft, [frances.lucraft@iwahq.org](mailto:frances.lucraft@iwahq.org) for more information and guidance.

### Looking to the future

During the first two years of the Africa office, emphasis was placed on utilities and I am glad to point out that many African utilities signed up as corporate members and have since experienced the benefits of being part of the global water professionals' network. Looking forward to the next five years, we are working towards doubling membership in all categories, and getting them interested in participating and contributing regularly to IWA activities.

Emphasis has shifted a little to the academia within the region. This includes universities, research institutions not to mention consultants especially the Specialist Groups. This way, we shall attract Specialist group activities to the region, that have this far been few and far between. One other sector that has not been fairly represented is industry. Industry feeds research and vice versa. We would therefore like to see more industries represented in IWA to complete the loop.

Finally, I would like to encourage those water professionals who are not yet members to sign up. You will definitely find it worth your while. Get in touch with me at [sarah.tibatemwa@iwahq.org](mailto:sarah.tibatemwa@iwahq.org).

*The writer is the Director – IWA Africa Regional Office*

## Opportunities in IWA Publishing for LAMICs Academia

 by IWA–Publishing Team

There is an increasingly urgent need for water and sanitation services in developing countries, even as population growth, economic pressures and climate change challenge the ability to meet these needs in a sustainable way. These issues contribute to an unprecedented demand for high quality information on both the science and best practice of water and environmental management. IWA Publishing is in a unique position to provide a publishing opportunity for authors with the expertise to meet this demand. We provide information services on all aspects of water, wastewater and related environmental fields. The publishing programme includes Water21 (the IWA membership magazine) and a broad range of journals, books, research reports, manuals, newsletters and online services.

### World-leading journals

IWA publishes the leading journals within the field of water, wastewater and related environmental fields. These includes *Water Research*, the top ranked Impact Factor journal in Water Resources (in collaboration with Elsevier); *Water Science & Technology*; *Journal of Water and Health* (in collaboration with the World Health Organisation - WHO) and ten other journals covering both research and practice. Journals are included within the Science Citation Index, which provides researchers, administrators, faculty, and students with quick, powerful access to the bibliographic and citation information they need to find relevant, comprehensive research data.

IWA Publishing authors have recently been featured by BBC News Online and on radio; Radio 4's The Today Programme, and the BBC World Service World Briefing; for their paper "GSM-enabled remote monitoring of rural handpumps: a proof-of-concept study" published in the *Journal of Hydroinformatics*. The researchers from the University of Oxford developed the idea of using mobile phone technology to monitor the performance of 'smart' hand pumps installed in 70 villages in Kenya.

Hundreds of millions of people in rural Africa who depend on hand pumps for drinking water could soon benefit from improved water supplies as a result of this study. The BBC news story is available online at <http://www.bbc.co.uk/news/science-environment-18358766> and the journal paper is available Open Access at [www.iwaponline.com/jh](http://www.iwaponline.com/jh).

### Support for LAMICs authors

The *Journal of Water, Sanitation and Hygiene for Development* (launched in 2011) is 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 for developing countries. Support is available for authors from Lower and Middle Income Countries, including a group of 'mentors' to assist potential authors from lower income countries, workshops on how to prepare and publish in *Journal of Water, Sanitation and Hygiene for Development* and a prize for the best paper each year from an author from a developing country. For more information visit [www.iwaponline.com/washdev](http://www.iwaponline.com/washdev), or contact [washdev@iwap.co.uk](mailto:washdev@iwap.co.uk).

### **The leading international book list dedicated to water and the environment**

IWA Publishing is in the unique position of having dedicated staff that focus solely on publishing international publications in water and the environment. With extensive experience in the international marketing of scientific, technical and professional publications, and specialist knowledge of the market, IWA Publishing offers the opportunity for significant sales worldwide.

Our book authors comprise renowned professionals and scientists from academic institutions, water utilities and consultancies worldwide (including the National Water and Sewerage Corporation of Uganda); and their interests span the continuum between cutting edge research and the application of best practice in water and the environment. We welcome new authors and our editors are happy to discuss your current writing plans.

### **Publishing opportunities in Water21 – the magazine of the International Water Association**

There are further publishing opportunities presented by IWA's magazine, Water21, which is also published by IWA Publishing. This is received by all of IWA's members as well as by a wider water sector readership. With more than 20,000 copies distributed for each of the six issues published annually, the magazine reaches a highly influential global water sector audience.

Water21 covers all of the themes and topics dealt with by IWA, but goes beyond this too, to help keep members and readers informed about the diverse issues relevant to the water sector.

Recent articles have therefore dealt with topics such as the combined challenges of meeting the growing worldwide needs for water and food, work that is underway to help provide politicians with global pictures or scenarios of how the world may look in the future, and at experiences so far of using the Water Safety Plan approach advocated by IWA and the World Health Organization for helping protect drinking water quality – a central topic of the forthcoming IWA water safety conference taking place in Kampala in November.

At a more technical level, other articles have covered efforts to adapt existing municipal wastewater treatment technologies for wider global use, at the debate of the use of centralised and decentralised approaches to wastewater management, and at the use of small-scale hydropower in drinking water supply systems in South Africa.

Water21 therefore presents an excellent publishing opportunity to potential authors, as long as the developments presented are current and of potential interest around the world.

### **The IWA Water Wiki – Open Access information for the global water community**

The IWA Water Wiki is an online platform where the global community of water professionals can interact and share knowledge. The website is free to access and, like Wikipedia, anyone can contribute. There are over 1,000 Open Access

articles across all areas of water, wastewater and related environmental fields, including reference material, case studies, research overviews and technical summaries.

The Events Extra area provides a permanent archive for conference materials, organized by event, including posters and presentation slides. There is a wealth of material focusing on issues relevant to LAMICs, including access to water and sanitation, and the site is already popular with many contributors and visitors based in Lower and Middle Income Countries.

In addition the site offers a number of networking features, including group work spaces and discussion forums – all free to use. The site is moderated by a dedicated Community Manager, and all material is reviewed after appearing by a group of Editors drawn from IWA's expert international membership. For more information on how to get involved visit [www.iwawaterwiki.org](http://www.iwawaterwiki.org).

### **Connected to the premier global network of water professionals**

IWA Publishing is a wholly owned subsidiary of the International Water Association (IWA). With access to the membership of the IWA, the premier global network of water professionals, IWA Publishing is uniquely placed to provide high quality author services and to market specialist publications effectively to a global audience.

We commission authors from both in and outside IWA and ensure the quality of our publications through rigorous peer-review. With the highest quality authors and using the expertise of the IWA to ensure the relevance of our publications to the needs of the water and environmental community, IWA Publishing is recognised as the leading international publisher in this field.

The readership for our publications is wide-ranging covering all those concerned with water and environmental management, including academic researchers and research centres, water utilities, regulators, industrial water users and water equipment manufacturers. Our publications are available both in print and online. For more information on publishing opportunities with IWA Publishing, visit our website: [www.iwapublishing.com](http://www.iwapublishing.com)





# IWA Events in Pictures



## Climate Change?



# A GENERAL OVERVIEW OF IWA EVENTS

## WWC&E in Busan (2012), Development Congress in Nairobi (2013) and WWC&E in Lisbon (2014)



 by Keith Robertson

### Busan for IWA 2012 World Water Congress and Exhibition

**T**his year's IWA World Water Congress & Exhibition, being held 16-21 September 2012 at BEXCO (Busan Exhibition and Convention Center), will see 5000 water professionals from around the world gather in the Korean coastal city of Busan. It will bring together people from all areas of the water and wastewater sector – scientists, researchers, regulators, industry, consultants and manufacturers – and showcase the latest technical and policy driven solutions to manage global water challenges.

Keynote speakers such as UN Special Rapporteur Catarina de Albuquerque and Korean Minister for the Environment Yoo Young Sook will bring their extensive expertise to the Congress programme, highlighting major issues such as water and sanitation provision, urban water pollution, and communication in the water industry, whilst an extensive range of workshops running throughout the Congress will provide discussion and presentation on all areas from multi-city collaboration on water quality improvement and risk management to micropollutant removal and membrane systems.

Three of the numerous themes that will be in evidence in Busan will be utilities and assets, integrated urban water systems, and water, climate and energy. The attention to utilities and their assets is appropriate given the ever-growing awareness of the prospects and concerns

around long-term management and financing of water and wastewater infrastructure. The linkages between water, climate and energy together form a theme that has been gaining greater attention, and is linked to the area of utilities and their assets. 'We have realised how much costs in general, but specifically energy, is tied up in networks' according to IWA Executive Director Paul Reiter. At the same time, climate change presents, for many areas, the prospect of more intense rainfall, meaning networks that carry wet weather flow will need to be sized accordingly. Together the themes therefore put a real focus on assets.'

The third of the three themes, integrated urban water management, ties in very closely with an important programme for IWA, its Cities of the Future programme. Here Reiter points out that there is a lot of talk about using 'smart' approaches. 'There is a whole different thought process, which is smart by design. Cities of the Future is really smart by design – how would you integrate and design differently to really reach a big imperative, which is to figure out how to be in a one world environment with a demand of three worlds of resources.'

The themes are relevant both to developed and to developing countries, as an example look at energy costs – these can represent 15-20% of the costs for utilities in developed countries. In Africa, it is closer to 50%, so you can imagine how important it is, whether thinking about how to make plants more efficient, thinking about how to make energy out of wastewater, or how to make networks better designed... This is just absolutely relevant for the developing world.

A range of pre-Congress workshops will provide a one- or two-day focus specifically on modelling activated sludge plants, optimising reverse osmosis and opportunities for Young Water Professionals (YWP), whilst alongside the Congress programme will run industry forums, the IWA Women in Water programme, a Utility Leaders Forum, Specialist Group meetings, and a focus on the winning projects of the IWA Project Innovation Awards. Hundreds of posters will display the latest in water and wastewater research, whilst technical tours will provide an opportunity to see large-scale projects in action. Sight-seeing tours will also allow delegates to explore the culture and history of Busan and the surrounding area. For more information about 2012 World Water Congress and Exhibition, please go to: [www.iwa2012busan.org](http://www.iwa2012busan.org).



## Nairobi for IWA 2013 Development Congress and Exhibition

The Water Services Providers Association (WASPA) of Kenya and the Nairobi City Water and Sewerage Company will jointly host the next IWA Development Congress and Exhibition in November 2013. This will be the third edition of the conference, following on successful events in Mexico City (2009) and Kuala Lumpur (2011).

IWA Executive Director, Paul Reiter said “hosting the 2013 Development Congress & Exhibition in Nairobi provides IWA with a great opportunity to serve our members and partners in low and middle income countries, strengthen our regional presence in Africa and further develop key thematic areas for the Association including Cities of the Future, Urban Sanitation and Water, Climate and Energy”, he added: “following the success of Mexico City and Kuala Lumpur, this conference will have a focus on practical solutions that work on the ground helping us to achieve universal access to water and sanitation services”.

The conference and exhibition will attract 1000 international delegates to participate in technical sessions, workshops and side-events co-organised with a variety of development partners addressing governance, technical and financial aspects of water and wastewater management in low and middle income countries. The exhibition will provide a unique space for the business and development community to showcase their services, products, programmes and achievements and identify new opportunities in existing and emerging markets. For more information about the 2013 IWA Development Congress & Exhibition, please go to: [www.iwa2013Nairobi.org](http://www.iwa2013Nairobi.org).

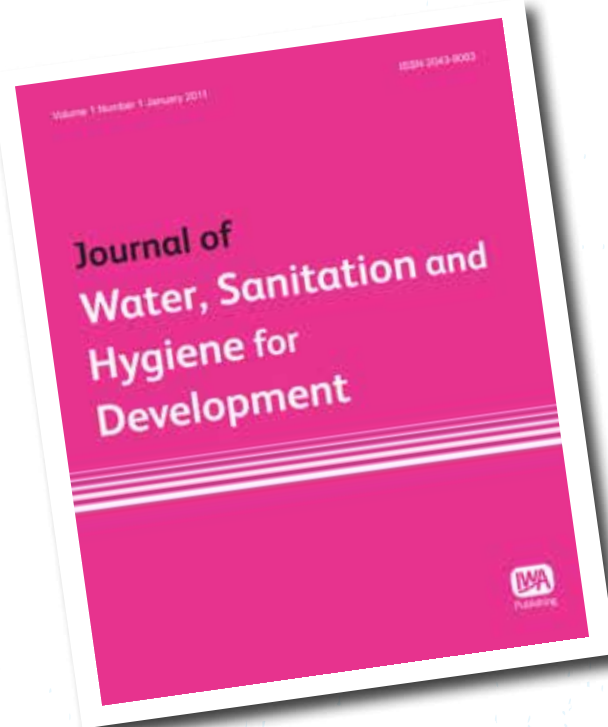
## Lisbon for IWA 2014 World Water Congress and Exhibition

From the famed 58-kilometre Águas Livres Aqueduct canals and its place at the mouth of the Tagus River, Lisbon has continued evolving solutions to its historic and recent water challenges. This includes complex international basin management— Portugal shares five river basins with Spain.

The country has seen significant improvements in water management in the past 20 years—including expertise and development in water services, regulation, planning and governance. This is reflected in Portugal's focus on working with international professionals, institutions and companies to build on knowledge and skills shared between the world's water research and industry leaders. It also emphasises the cooperation required to develop sustainable water management in line with the Millennium Development Goals. Portugal's experiences are stimulating for international leaders looking for successful examples of enterprising regional systems, national policy initiatives, balancing private and public

sectors, financial sustainability, and regulation and benchmarking water systems.

In that light, this ninth IWA World Water Congress and Exhibition continues the International Water Association's tradition of gathering the best international ideas and professionals. Lisbon's lively 'present' and proud past combine in a mixing pot of strong cultural diversity. Its soft light and laid-back feel promise a unique experience for visitors. For more information about 2014 World Water Congress and Exhibition, please go to: [www.iwa2014lisbon.org](http://www.iwa2014lisbon.org).



# Internship

## My Experiences at the IWA–Global Operations Office in Den Haag

 by Rebecca David



**Rebecca David:** University of South Florida, Tampa Florida

**Research:** Using the Triple Bottom Line to Analyze the Netherlands' Water Act.

**Interned:** Den Haag, NL

One of the most important requirements for Master's students at the Patel School of Global Sustainability, in the University of South Florida, United States, is to complete an international internship. This internship ensures that students who are studying Global Sustainability acquire first-hand knowledge regarding the interconnected nature of sustainability on a global scale. Fortunately, the IWA is connected with my University. Due to this connection, I was able to spend my internship with the Global Operations Office in Den Haag, Netherlands. The internship gave me the chance to see the world in a different perspective. The experience has changed my outlook on water management and sustainability as a whole.

The IWA was an amazing organization with which to intern. I was given my own desk where I could focus on my research and utilize the space I was given to be creative, exploring my ideas in order to create sound a sound study. This was the first time in my life where I have had the opportunity to go to work - where that work was my own research in my field of study. Being able to work on my own project made the time I spent at the IWA something that I will treasure throughout the rest of my career.

The majority of the courses that are necessary to complete my master's degree are available online. While this is quite useful, as I was able to take classes while still being gainfully employed, I did not have the opportunity to work, in person, with those people who care and understand about water and sustainability. In fact, in many cases, my experiences as a water student have been as an outsider, as I have been the environmentally concerned student caught in a group of traditionally-minded peers. So, when I came to the



A Canal in Den Haag

IWA and was surrounded by people who truly appreciate water and understand my drive to impact the world in a positive way, I realized just how important a supportive community is to a positive research experience.

The IWA was constantly a highly supportive organization. My advisor listened to my project idea and was constantly inspiring me to produce the best work I could. His



excitement in my project helped me develop increased enthusiasm in my project even when it was hard to remember the inspiration after hours of grueling research.

By encouraging me every step of the way, my advisor helped me realize that I can make a difference in the field and that I need to follow through to create an exceptional final product. He also diligently worked to connect me with people in the field in order to further my understanding of the overall system. Not only did he do everything he could to make my time at the IWA a positive, educational experience - but the entire office was supportive and involved in my stay. They were interested in my research and in making sure that I enjoy my time in the Netherlands. Several of my best meals and most memorable experiences were the direct result of a recommendation from a member of the IWA. Not only did they tell me great places where I could truly experience Netherlands culture but they invited me out to help me feel much more comfortable with the area and welcomed to the country. Additionally, the members of the IWA spent time answering my many questions about cultural differences. Being a person without international travel experience, I had a lot of questions. Every single member of the IWA made sure that I left with answers and a better understanding.

The most memorable part of the entire trip was being a part of such a multi-cultural experience. Every day staff members worked and joked together in languages foreign even to their place of residence, learning through the language barrier. This is what is most incredible about the IWA; the organization has found a way for so many nationalities to come together and create this fantastic amalgamation of cultures making the internship experience that belongs solely to the IWA. So many countries are represented within a single office! One could easily say that, due to the combination of cultures and experiences, the IWA is a kind of 'United Nations of Water.' This group relishes the chance to learn from each other, not only about water related topics but also with regard to national differences. I think what makes this coalition so memorable is that it shows, on a small scale; exactly what the world needs to do in order to solve so many issues. Nations all around the world need to celebrate their differences and work together; providing explanations, when needed, and always working toward a common goal.



# The IWA-Global Operations Office In Den Haag, Holland

Volume 4, Special Issue 1, July - September 2012

## Pictorial # 3







# Some Tips on Water Usage and Conservation

(source: <http://www.eartheasy.com>)

 by **Martin Kalibbala**

users will hold the lever down too long or do multiple flushes to get rid of waste. Two flushings at 1.4 gallons is worse than a single 2.0 gallon flush. A better suggestion would be to buy an adjustable toilet flapper that allow for adjustment of their per flush use. Then the user can adjust the flush rate to the minimum per flush setting that achieves a single good flush each time.

For new installations, consider buying "low flush" toilets, which use 1 to 2 gallons per flush instead of the usual 3 to 5 gallons.

1. Check faucets and pipes for leaks  
A small drip from a worn faucet washer can waste 20 gallons of water per day. Larger leaks can waste hundreds of gallons.
2. Don't use the toilet as an ashtray or wastebasket. Every time you flush a cigarette butt, facial tissue or other small bit of trash, five to seven gallons of water is wasted.
3. Check your toilets for leaks  
Put a little food colouring in your toilet tank. If, without flushing, the colour begins to appear in the bowl within 30 minutes, you have a leak that should be repaired immediately. Most replacement parts are inexpensive and easy to install.
4. Use your water meter to check for hidden water leaks  
Read the house water meter before and after a two-hour period when no water is being used. If the meter does not read exactly the same, there is a leak.
5. 5. Install water-saving shower heads and low-flow faucet aerators  
Inexpensive water-saving low-flow shower heads or restrictors are easy for the homeowner to install. Also, long, hot showers can use five to ten gallons every unneeded minute. Limit your showers to the time it takes to soap up, wash down and rinse off. "Low-flow" means it uses less than 2.5 gallons per minute.  
You can easily install a ShowerStart showerhead, or add a ShowerStart converter to existing showerheads, which automatically pauses a running shower once it gets warm. Also, all household faucets should be fit with aerators. This single best home water conservation method is also the cheapest!
6. Put plastic bottles or float booster in your toilet tank  
To cut down on water waste, put an inch or two of sand or pebbles inside each of two plastic bottles to weigh them down. Fill the bottles with water, screw the lids on, and put them in your toilet tank, safely away from the operating mechanisms. Or, buy an inexpensive tank ball or float booster. This may save ten or more gallons of water per day.
7. Replacing an 18 liter per flush toilet with an ultra-low volume (ULV) 6 liter flush model represents a 70% savings in water flushed and will cut indoor water use by about 30%.
8. Insulate your water pipes.  
It's easy and inexpensive to insulate your water pipes with pre-slit foam pipe insulation. You'll get hot water faster plus avoid wasting water while it heats up.
9. Take shorter showers.  
One way to cut down on water use is to turn off the shower after soaping up, then turn it back on to rinse. A four-minute shower uses approximately 20 to 40 gallons of water.
10. Turn off the water after you wet your toothbrush  
There is no need to keep the water running while brushing your teeth. Just wet your brush and fill a glass for mouth rinsing.
11. Rinse your razor in the sink  
Fill the sink with a few inches of warm water. This will rinse your razor just as well as running water, with far less waste of water.
12. Use your dishwasher and clothes washer for only full loads  
Automatic dishwashers and clothes washers should be fully loaded for optimum water conservation. Most makers of dishwashing soap recommend not pre-rinsing dishes which is a big water savings.  
With clothes washers, avoid the permanent press cycle, which uses an added 20 liters (5 gallons) for the extra rinse. For partial loads, adjust water levels to match the size of the load. Replace old clothes washers. New Energy Star rated washers use 35 - 50% less water and 50% less energy per load. If you're in the market for a new clothes washer, consider buying a water-saving

Be sure at least 3 gallons of water remain in the tank so it will flush properly. If there is not enough water to get a proper flush,



frontload washer.

13. Minimize use of kitchen sink garbage disposal units  
In-sink 'garburators' require lots of water to operate properly, and also add considerably to the volume of solids in a septic tank which can lead to maintenance problems. Start a compost pile as an alternate method of disposing food waste.
14. When washing dishes by hand, don't leave the water running for rinsing  
If you have a double-basin, fill one with soapy water and one with rinse water. If you have a single-basin sink, gather washed dishes in a dish rack and rinse them with a spray device or a panful of hot water. Dual-swivel aerators are available to make this easier. If using a dishwasher, there is usually no need to pre-rinse the dishes.
15. Don't let the faucet run while you clean vegetables  
Just rinse them in a stoppered sink or a pan of clean water. Use a dual-setting aerator.
16. Keep a bottle of drinking water in the fridge.  
Running tap water to cool it off for drinking water is wasteful. Store drinking water in the fridge in a safe drinking bottle. If you are filling water bottles to bring along on outdoor hikes, consider buying a LifeStraw personal water filter which enables users to drink water safely from rivers or lakes or any available body of water. Water conservation in the yard and garden...
17. Plant drought-resistant lawns, shrubs and plants  
If you are planting a new lawn, or overseeding an existing lawn, use drought-resistant grasses such as the new "Eco-Lawn".  
Many beautiful shrubs and plants thrive with far less watering than other species. Replace herbaceous perennial borders with native plants. Native plants will use less water and be more resistant to local plant diseases. Consider applying the principles of xeriscape for a low-maintenance, drought resistant yard.  
Plant slopes with plants that will retain water and help reduce runoff.  
Group plants according to their watering needs.
18. Put a layer of mulch around trees and plants  
Mulch will slow evaporation of moisture while discouraging weed growth. Adding 2 - 4 inches of organic material such as compost or bark mulch will increase the ability of the soil to retain moisture. Press the mulch down around the dripline of each plant to form a slight depression which will prevent or minimize water runoff.  
For information about different mulch materials and their best use, click here.
19. Don't water the gutter  
Position your sprinklers so water lands on the lawn or garden, not on paved areas. Also, avoid watering on windy days.
20. Water your lawn only when it needs it  
A good way to see if your lawn needs watering is to step on the grass. If it springs back up when you move, it doesn't need water. If it stays flat, the lawn is ready for watering. Letting the grass grow taller (to 3") will also promote water

retention in the soil.

Most lawns only need about 1" of water each week. During dry spells, you can stop watering altogether and the lawn will go brown and dormant. Once cooler weather arrives, the morning dew and rainfall will bring the lawn back to its usual vigor. This may result in a brown summer lawn, but it saves a lot of water.

21. Deep-soak your lawn  
When watering the lawn, do it long enough for the moisture to soak down to the roots where it will do the most good. A light sprinkling can evaporate quickly and tends to encourage shallow root systems. Put an empty tuna can on your lawn - when it's full, you've watered about the right amount. Visit our natural lawn care page for more information.
22. Water during the early parts of the day; avoid watering when it's windy  
Early morning is generally better than dusk since it helps prevent the growth of fungus. Early watering, and late watering, also reduce water loss to evaporation. Watering early in the day is also the best defence against slugs and other garden pests. Try not to water when it's windy - wind can blow sprinklers off target and speed evaporation.
23. Add organic matter and use efficient watering systems for shrubs, flower beds and lawns  
Adding organic material to your soil will help increase its absorption and water retention. Areas which are already planted can be 'top dressed' with compost or organic matter.  
You can greatly reduce the amount of water used for shrubs, beds and lawns by:
  - The strategic placement of soaker hoses
  - Installing a rain barrel water catchment system
  - Installing a simple drip-irrigation system
 Avoid over-watering plants and shrubs, as this can actually diminish plant health and cause yellowing of the leaves. When hand watering, use a variable spray nozzle for targeted watering.
24. Don't run the hose while washing your car  
Clean the car using a pail of soapy water. Use the hose only for rinsing - this simple practice can save as much as 150 gallons when washing a car. Use a spray nozzle when rinsing for more efficient use of water. Better yet, use a waterless car washing system; there are several brands, such as EcoTouch, which are now on the market
25. Use a broom, not a hose, to clean driveways and sidewalks.
26. Check for leaks in pipes, hoses, faucets and couplings  
Leaks outside the house may not seem as bad since they're not as visible. But they can be just as wasteful as leaks indoors. Check frequently to keep them drip-free. Use hose washers at spigots and hose connections to eliminate leaks.

Water conservation comes naturally when everyone in the family is aware of its importance, and parents take the time to teach children some of the simple water-saving methods around the home which can make a big difference.

# Specialist Groups, Task Groups and Specialist Group Clusters

*SGs and their respective Task Groups, as well as the SG Clusters are described as the 'heart' of the IWA. Specialist Groups facilitate cooperation, networking and knowledge generation, primarily through regular conferences and publications. A key benefit of IWA membership is the ability to join these groups, which in turn provides opportunities for international networking, sharing information, skills, and making solid professional and business contacts.*



 by Hong Li

## General Description

Specialist Groups (SGs) represent the core vehicle for issue-based interaction on scientific, technical and management topics within the International Water Association (IWA). SGs and their respective Task Groups, as well as the SG Clusters are described as the 'heart' of the IWA. Specialist Groups facilitate cooperation, networking and knowledge generation, primarily through regular conferences and publications. A key benefit of IWA membership is the ability to join these groups, which in turn provides opportunities for international networking, sharing

information, skills, and making solid professional and business contacts. The specialist groups within IWA are self-managed and include groups covering all-important topics in the water management sector.

IWA SGs are a major source of channelling the energy that is in the water professional community to organize events, spread news through regular newsletters, to generate collaboration on a voluntary basis, etc. One of the larger voluntary efforts that find an outlet through the Specialist Groups are Task Groups that are formed within a hosting Specialist Group to perform a defined task, for example the production of a IWA Scientific and Technical Report, Manual of Practice, Position Paper, etc., that describes the state-of-the-art in a certain discipline or a consensus to move forward on a certain topic.

Another form is Working Group (WG), which is a sub-set of a Specialist Group (SG) with a restricted scope, (e.g. real-time control in urban drainage, as part of the SG on Urban Drainage), that can generate a wide range of activities around the WG's themes, e.g. conference and workshop organization, update of IWA's waterwiki, production of a series of reports, leaflets, papers, development of tools, website maintenance, etc. For example, one of the highly



appreciated IWA-publications on a regular basis, is the biannual leaflet entitled "International Statistics for water services – information every manager should know".

This leaflet is the output of a worldwide survey on water tariffs and is issued by the working group on statistics within the Specialist Group on Statistics and Economics. The leaflet contains lots of information on water tariffs in various countries, regions and cities. Also relevant statistics on water production are gathered and the annual water bill for a household is simulated. Regulatory issues and mechanisms are analysed.

In order to respond to the increasing member interest in cross-cutting research and dialogues across IWA Specialist Groups, IWA has been facilitating and working together with leading experts on developing clusters. Two well-developed Clusters are the Bio Cluster and the Smart Water Cluster. The interest in Bio-Cluster formation has been stimulated by the dizzying advances in molecular biology, and at the same time recognition of the need for new solutions to water treatment problems that draw on all available biological tools in the water and wastewater treatment process. The Smart Water Cluster works closely with the European Desalination Society (EDS) and its focus is to emphasize the acquisition and development of diverse water resources – for example surface water, groundwater, reuse, desalination and water conservation – and to develop strategies for offsetting risks and challenges typically associated with a single resource option.

## IWA SGCTGs activities and outcomes

SGCTGs have a vast variety of activities including organizing specialized conferences, producing publications of books, papers and group newsletters, etc. Most of the IWA conferences are specialised conferences organized by different specialised groups, where like-minded IWA members greet and meet, exchange knowledge and networking. There are in average more than 30 specialized conferences each year. Some groups produce books and best practise guides such as the specialist group on metals and related substances in drinking water, they are publishing a series of six Best Practice Guides including best practice guides on: the Control of Lead, Sampling and Monitoring of Metals in Drinking Water, Removal of Metals from Drinking Water by Treatment, as well code of practice on the Internal corrosion control of water supply systems, etc.

In order to improve the quality of knowledge sharing, IWA

has produced the report on Global Trends & Challenges in Water Science, Research and Management: A compendium of hot topics and features from IWA Specialist Groups. It is a compendium compiled from the submissions of IWA Specialist Groups. This report aims to raise the profiles of the IWA Specialist Groups and let Specialist Groups be better known by water professionals in the world, as well as to supply better knowledge dissemination. It is composed of papers from each group summarizing the current state of knowledge within the SG topic/subtopics and future trends and challenges. It creates an understanding of the topic for the reader, and shows the trends and challenges within the Specialist Groups by identifying, for example, three hot topics that are expected to surface in the next five years. No particular format was imposed, allowing the Specialist Groups to develop their messages freely to the community.

## How to get involved

There are a number of ways IWA members can engage in IWA Specialist Groups. At the minimum, as a SG member, you will be informed of all news relating to the publication of newsletters, what activities the group is undertaking, and specialized conferences it is hosting, as well as news of any changes within the group and the SG management committee, etc. For those who wish to actively contribute to a Groups' activities, members can: contribute to the publications produced by the SG, which range from SG newsletters to the publication of reports and books; attend and present at specialized conferences organized by the SG; become involved in task groups and working groups to work on specific tasks (by invitation only) together with some other members, etc. In addition, all the specialist groups have a team of management committee who are representing all members and very actively leading the activities of the group. So people who would really like to seek an even higher level of engagement can consider putting yourself forward for nomination as a SG management committee member, help in the organization of the specialized conferences, or take up an initiative to create task groups or working groups, etc.

There are currently 51 specialist groups, and every IWA member can join an unlimited number of specialist groups. For more information on specialist groups, please visit the IWA website (under networks specialist groups) or contact specialist groups manager: Hong Li ([hong.li@iwahq.org](mailto:hong.li@iwahq.org)). Please also don't forget to visit the full list of Specialist Groups Conferences - <http://www.iwahq.org/36/events/iwa-events.html>.



## 3rd IWA Development Congress & Exhibition



# Join Us in Nairobi

The International Water Association is pleased to announce that the 3rd IWA Development Congress and Exhibition will be held in Nairobi, the capital city of Kenya.

The overarching goal of the IWA Development Congress series is to identify, showcase and debate practical experiences and examples of service provision in developing countries that 'work', and critically, 'work at large scale'. The Congress in Nairobi is therefore explicitly solutions focused, and provides a unique opportunity to signpost best practices, applied research and enabling policies to meet the water and sanitation challenges of today and tomorrow in an increasingly urbanizing world.

This is your invitation to join us in Nairobi as a delegate, strategic partner, trade visitor, presenter, sponsor or exhibitor.

- If you join us in Nairobi as a delegate or trade visitor, you will learn about solutions that will meet the water and sanitation challenges in low and middle-income countries, and network with water and sanitation experts from across the globe. If you wish to present a paper at the Congress, the deadline for abstract submission closes on 30 November 2012.
- If you join us as a strategic partner, you will work with IWA and other organizations to deliver a rich Congress programme and help catalyse urban water transitions through advocacy, capacity building and new frameworks and initiatives.
- If you join us as an exhibitor or sponsor, you are certain to enhance the reputation of your company or institution as a leading player in the global water field. Bookings are being taken now.

Please visit us at the Congress website for more updates and information.

**[www.iwa2013nairobi.org](http://www.iwa2013nairobi.org)**



**14 - 17 October 2013**  
**Nairobi, Kenya**

#### Organisers



International  
Water Association



#### Institutional Partners



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## Advance Programme and Registration

# WATER SAFETY CONFERENCE

Improving Service Delivery  
and Protecting Public Health

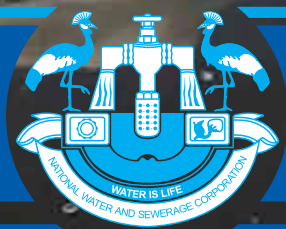


Early bird  
registration  
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13-15 November 2012  
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