

Kjellén, M.; Vairavamoorthy, K. and Donoso, G. 2017.
Editorial – Stockholm World Water Week 2016: 'Water for sustainable growth'.
Water Alternatives 10(2): 455-458



Editorial – Stockholm World Water Week 2016: 'Water for sustainable growth'

Marianne Kjellén¹

Water & Ocean Governance Programme (WOGP), Bureau for Policy & Programme Support (BPPS), United Nations Development Programme (UNDP), Stockholm, Sweden; marianne.kjellen@undp.org

Kalanithy Vairavamoorthy

International Water Management Institute, Colombo, Sri Lanka k.vairavamoorthy@cgiar.org

Guillermo Donoso

Water Law and Management Center, Pontificia Universidad Católica de Chile; gdonosoh@uc.cl

World Water Week in Stockholm is the largest annual global event on water. Under the theme of 'Water for sustainable growth', the 2016 Week brought together over 3200 individuals and around 330 convening organisations from 130 countries.

Aiming to bridge the gaps between policy, science and practice, the week gathers water experts, practitioners, decision-makers, academics, business representatives and young professionals from around the world to network, exchange ideas, and develop solutions to water-related challenges.

This themed section features a selection of papers from the 2016 Water Week. They illustrate the width of the theme and the importance of holistically addressing social, economic and environmental concerns in order to assure 'water for sustainable growth'. Water security, the availability of water for health, livelihoods, production and ecosystems at an acceptable level of risk to people, environments and economies, is key for water's relation to sustainable growth.

'Water for sustainable growth' highlights how people's livelihoods around the globe depend on well-functioning and well-managed ecosystems. The water resources and related ecosystems are under considerable pressure resulting from increasing and changing demands from growing populations, urbanisation processes and economic development. But in the two-way relationship between society and the environment, continued economic development also depends on water security attained through sustainable water resources management. Sustainable growth implies that economic growth should be decoupled from ecosystem degradation, and vice-versa, that negative environmental threats and impacts on human development should be minimised.

Sustained growth also has an important equity component, where water needs to drive economic growth together with social well-being in ways that narrow the gap between rich and poor, and contribute to human dignity. The vital role of water in this area is most clearly recognised by securing access to safe water, sanitation and hygiene. Water and sanitation has been recognised as human rights, and also has specific targets under the Sustainable Development Goals of the 2030 Agenda. As

¹ The views expressed herein are those of the author(s) and do not necessarily reflect the views of the United Nations Development Programme.

highlighted in the papers, governance – the way society organises itself, makes decisions and takes action – at local, national and regional levels – is the entry point for enhancing water security and sustainable growth.

Connecting the important angle of water security from the perspective of flood risks, the paper by Saurí and Palau paints the historic trajectory of 'Urban drainage in Barcelona: from hazard to resource?' and shows how adaptive flood risk management has been introduced into wastewater and drainage planning in the most recent decades. The construction of a modern drainage system in Barcelona was initiated in the late 19th century. The rapid growth of the city during the 20th century saw the expansion of centralised sewers, along with increased pollution and flooding problems. It was only towards the end of the century – through urban renewal spurred by the Olympic Games in 1992 – that the system connected to wastewater treatment plants and flooding was somewhat controlled through underground reservoirs. Nevertheless, the approach was to reinforce the conventional systems by building larger sewers and enhanced treatment, principally to protect beachfront environmental quality. Since the early 2000s, a more adaptive and decentralised approach has been introduced, including small-scale drainage systems.

Departing from the 19th century idea of shoving everything down the drain and away from cities, and the 20th century end-of-pipe solutions, the 21st century presents distributed technologies and ways to not only retain flood water through enhanced infiltration and evapotranspiration, especially through urban green areas, but also to enhance reuse of water and the nutrients contained in wastewater. The – still ongoing – transition towards more sustainable urban drainage has necessitated both technological and socio-institutional change. While a task force on Sustainable Urban Drainage Systems has spurred collaboration between departments, many of the projects aiming to make Barcelona a 'water-sensitive city' have been driven by landscape architects. One important aspect of the present transition, as concluded by the authors, is that existing systems can be repurposed – rather than substituting one approach for the other, they can coexist. In terms of using 'water for sustainable growth', the transition will not be complete, however, until runoff is transformed into a resource.

Writing about 'Resource recovery and reuse as an incentive for a more viable sanitation service chain' Rao and colleagues also show how various systems can and must coexist. They currently do so, but under very different governance arrangements: Sewerage services are mostly provided by government agencies, which also regulate or operate wastewater treatment plants. The policy frameworks surrounding sanitation services provided through centralised sewers also tend to be relatively complete. In contrast, on-site sanitation systems where the faecal sludge is to be collected, transported, disposed and treated greatly beyond government purview, has become an action arena for the private sector and often independent service providers. This area of business tends to present a mix of actors and in many areas the service falls outside regulatory frameworks and utility jurisdictions.

On-site sanitation systems currently serve over 2.7 billion people in the world, and are expected to increase in importance. Whereas the common lack of collection and treatment of faecal sludge from on-site sanitation solutions is highly problematic; it also offers greater potential for safe resource recovery and reuse, compared to sewage sludge generated in conventional sewer treatment plants. With an increasing interest in concepts around a circular economy, and new technical innovations for energy and biofertilizer generation, entrepreneurs are recognising the opportunities in human waste management. Drawing on several examples from Africa and Asia, the authors present business models for faecal sludge management operations. Contributing to sustainable growth, these models not only present ways to enhance safe reuse and resource sustainability, but also aim to provide business opportunities. This will still require enhanced regulation and coordination, along with collaboration and involvement of new stakeholder groups – notably farmers. At the broader level, decentralised faecal sludge management systems will need to coexist with existing and also expanding sewer networks, but more importantly, faecal sludge management is not to be seen as an interim solution but is here to

stay. They need appropriate regulatory frameworks and viable enterprises in the businesses of environmental management – for green development and sustainable growth.

Another neglected area, albeit not cherished as a business opportunity or decent work, is the back-breaking exercise of water-fetching, which occurs every day around the year, especially in poor rural households. Geere and Cortobius, in their article on 'Who carries the weight of water? Fetching water in rural and urban areas and the implications for water security', analyses large sets of data on water-fetching from 23 countries. This synthesis establishes that in rural areas nearly half of the population gets its water from outside their homes. In urban areas, this proportion is lower but still close to 30%. In both rural and urban areas, the typical water carrier – or person with main responsibility for bringing water to the home – is an adult woman. In urban areas, adult men were identified as having the main responsibility for collecting water in over 40% of the households. Children also participate, but only in 5-7% of the cases with main responsibility for the chore.

In relation to sustainable growth and human development, it is paramount to understand the conditions under which household water security is maintained. In spite of the Millennium Development Goal target on water having been attained, large populations – particularly women in poverty – still physically carry that water. In order to be aware of the problem and future changes, continued data collection at a disaggregated level is critical. In terms of governance, the drudgery of water collection warrants intensified efforts to reach 'the last mile' to attain universal access through systems that provide services to all rather than settling for 'self-provision'. The human right to water has 'accessibility' as one criterion. The conditions of access need to be revisited in light of human rights as well as for adequate water security.

Assuring access to water and sanitation services, in general, is a local government responsibility. The performance of this actor or stakeholder is crucial for the realisation of the human right to water and the attainment of the Sustainable Development Goals. McNicholl and colleagues analyse the 'Characteristics of stakeholder networks supporting local government performance improvements in rural water supply' with cases from Ghana, Malawi and Bolivia. Using social network analysis and qualitative analysis from stakeholder interviews, the authors identified certain characteristics of networks that appeared to be supportive of higher local government performance. These related to strong and multiple ties of skills and information-sharing – with communities and operators as well as with central government and higher levels in the sector hierarchy. Coordination also came out as important. This speaks for the importance of impartial and professional cadre of the public sector, coupled with overall transparent and participatory regimes of governance that enhance coordination, collaboration and information exchange.

Such relations of good governance become increasingly complex and complicated at the level of transboundary water cooperation. Can transboundary water cooperation be built between conflicting riparians in the developing world? This question is analysed by identifying the presence or absence of necessary and sufficient conditions for transboundary water cooperation, and determining how third parties can intervene more effectively to improve transboundary water interaction. In the article entitled 'Muddy Waters: International actors and transboundary water cooperation in the Ganges-Brahmaputra problemshed?', Hanasz studies water interaction between India-Nepal, India-Bhutan, and India-Bangladesh. These cases suggest that transboundary cooperation is a complex phenomenon, which can only emerge when multiple conditions are met – and even then, it cannot be guaranteed. Additionally, it is found that third parties cannot bring about transboundary water cooperation, although they may play a limited role in helping to provide the conditions in which positive interaction may flourish. This role is largely limited to building trust and political will by addressing historical grievances and power asymmetry between riparians. In the end, water security for the people in the 'problemshed' is left to the (lack of) political will of the basin states.

The Viewpoint on 'Progressive tariff: An example of good governance to promote equity and inclusive growth' by Muniruzzaman and colleagues deals with a community in the downstream coastal area of the above basin. Actually, the increasing salinity of groundwater is a typical consequence of over-abstraction or lack of joint management of water resources in a basin. This viewpoint focuses on ways to make the best out of a difficult situation and to distribute water as equitably as possible. Whereas poorer households will need to resort to community supplies, and wealthier households and businesses are offered and able to pay for individual connections, the pro-poor tariff has enabled cost recovery and also to provide a source for those not able to pay the price of water delivered by private vendors. This case also illustrates the connectedness of water issues in a region; the locally good governance can alleviate the situation but remains at risk by saline intrusion, which forms part of the problem at a higher scale.

From the wide range of experiences and circumstances encompassed by this selection of papers, it is clear that ensuring water for sustainable growth seldom, if ever, involves either-or choices. Whether the challenge is urban sanitation or water supplies for rural households, hybrid solutions are required that bring together seemingly divergent approaches and disparate groups, including government agencies, the private sector and local communities. The key is to determine what kind of framework is best suited for uniting different approaches and groups in a collective effort centred on shared goals and responsibilities.

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