World Water Week 2017 | Overarching conclusions

Water and waste: Reduce and reuse

Introduction

Every year, SIWI welcomes professionals from the wider water, environment and development communities in Stockholm to discuss, find new insights and ideas, and drive the water agenda forward. For this year's theme "Water and waste: Reduce and reuse", we had some 3 300 participants from more than 135 countries.

We are happy to, for the first time, share our conclusions from the Week in a digital interactive way on siwi.org/overarching2017. This document contains the take-home messages from SIWI's Executive Director, Torgny Holmgren; the three rapporteur teams who attended all events during the Week; and the chair of the World Water Week Scientific Programme Committee, Torkil Jønch Clausen, summarizing the nine seminars, which form the Week's scientific core.

We hope that you enjoy the read and have the possibility to also explore the digital version. And of course, we look forward to seeing you next year in Stockholm when we take on "Water, ecosystems and human development".

Content

Reflections from the Executive Director

Torgny Holmgren, Executive Director SIWI

In its 2018-2021 Strategy, launched at 2017 World Water Week, SIWI sets out to strengthen the organization's main pillars; its convening power, and its building and sharing of knowledge. This year's World Water Week once again proved SIWI's capacity to bring together key actors in the water, climate and development communities, for a week-long sharing of experiences, expertise and opportunities to form new partnerships that will enhance implementation of Agenda 2030.

In addition to the formidable work of the Rapporteur teams, whose take-home messages can be found in these Overarching Conclusions, and the outcomes of the nine Seminars that form the scientific core of World Water Week, I would like to add my reflections from this year's Week.

Policy-makers want to hear what we have to say. With every year, we see more and more decision-makers from different professional communities coming to the Week to discuss, and to learn. It is very encouraging. Without the groundwork; improved and properly implemented policies, we cannot hope to reach the Water Goal, or indeed fulfill Agenda 2030.

Strengthened governance allows and directs vital investment. Strong governance systems are necessary for attracting financing and for effectively implementing technological advancements. Solid governance – in the public and the private sector alike - is needed to both spur and improve the efficiency of investments. The same goes for new technology. Strong governance needs to be in place to ensure that resources are used well and right.

Young professionals are claiming their rightful place at the table. The increasing number of young people who choose to attend the Week is very promising. This year, over a quarter of all participants were 35 years of age or younger. The dedicated Young Professionals Day offered a dynamic mix of lively sessions. We also celebrated the finalists and winners of Stockholm Junior Water Prize from around the globe. Seeing the competence, courage and quality of their work, convinces me that we are heading towards a bright water future. The 2017 winners from USA developed a project with the potential to provide safe drinking water for large populations. It is a very timely winning project.

Interest from the private sector at World Water Week is escalating. At SIWI and World Water Week, we intend to expand the opportunities and arena for collaboration and engagement between the private and public sectors as well as with civil society. For some years, we have organized special meetings for business leaders. This has evolved into such an important and promising forum that we plan to expand its scope at future Weeks.

We must make a new push for the Water Goal in the Agenda 2030. The Water Goal, ensuring the sustainability of fresh water and access to sanitation for all, is central to reaching most of the other SDGs. It is imperative that the implementation of SDG6 and all its targets does not fall behind. We aim to make World Water Week the place for annual assessment of the role of water in the implementation of Agenda 2030 and the Paris Climate Agreement. I believe this position has been strengthened this year, but we

must not rest. Both V the Hungarian President and the outgoing President of the UN General Assembly stressed that we need a more focused global effort towards tackling the water challenges.

Water Cooperation is crucial in times of increased demand and scarcity. Nearly two-thirds of all countries share common water resources, and countries tend to cooperate rather than fight over water. However, the increasing demand for fresh water resources in ever larger parts of our world risks changing that. That gives even greater importance to the International Water Law Framework - providing us with the foundation to tackle this mounting challenge. The 2017 Stockholm Water Prize laureate, Stephen McCaffrey, is a true inspiration in this area.

We must strive to better understand the different values of water. With increasing scarcity, we must recognize the many values attached to water, be it economic, social, environmental, cultural or religious. I believe that by re-valuing water, we will develop a deeper understanding and respect for this precious resource, and thus be better prepared for more efficient use. A growing global population is creating a higher demand for fresh water. Climate-driven changes in weather patterns, leading to extended droughts and devastating floods, further exacerbate pressure on our common water resources. Efficient use, therefore, is not an option but a must to ensure the access to clean water for all and that all the food, energy and other benefits that depend upon it can be provided. That becomes an even clearer imperative when we broaden our horizons to the ecosystems that underpin our existence. This fundamental and fascinating topic will be addressed during next year's World Water Week. You are all welcome to join us again then.

Conclusions from the rapporteur teams

The Rapporteur teams are an instrumental part of the reporting and conclusions process. Experienced Lead Rapporteurs, together with Junior Rapporteurs, follow pre-identified themes during the Week to capture, summarize and analyze the discussions in relation to the overall aim of the Week. The key messages distilled by the rapporteurs are presented during the closing plenary session.

Economics team report

Lead: Miriam Otoo (IWMI), Carlos Dias (CAF). Junior rapporteurs: Bella Strid, Lindsey Higgins, Marika Samuelsson, Greta Moreen Wistrand, Andrea Karin Beck, Suhaib Ibrahim.

A blended approach to effect genuine progress

Improving water security is essential to achieving the 2030 Agenda, and offers substantial economic potential. The economics of water security relies heavily on wise water use and wastewater management, which in turn are dependent on appropriate financing. Water financing is determined by the valuation, costing and pricing of water, effective economic incentives, innovative financing mechanisms, greening wastewater "from waste to wealth", and transparent investment policies of donor agencies, development banks and climate funds.

However, how can the 2030 Agenda by realized given limited financial resources, lack of reliable information, limited capacity of various stakeholders, (politicians, regulators, planners, financiers and service providers), and weak institutional frameworks? There is still no universally accepted estimate of the financial costs associated with achieving the SDGs. Moreover, it is unclear whether current estimates account for the financial resources needed to implement the SDGs from the perspective of introducing a circular economy, or if these refer to the amount of funding necessary to sustainably extend and maintain existing infrastructure.

The financial gap is indeed substantial, especially for developing countries that face pressure to develop in more environmentally and socially responsible ways than was the case for the developed world. The private sector will need to play a role in addressing this gap, and representatives of the sector expressed willingness to provide much-needed capital for resource recovery and reuse (RRR) initiatives and the water sector more broadly. However, issues related to enabling environments, risk and uncertainty, financial mechanisms, project bankability, and matching projects with appropriate investors in terms of objectives, scale, and timelines represent obstacles to attracting finance.

Naturally, the private sector tends to engage in the sector and the RRR space when a business case exists. Innovative business models and financing mechanisms, such as blended, green and climate finance, will be needed to address shortfalls. Furthermore, simplicity in the design of financial structures to mitigate perceived high risk and uncertainty must be prioritized.

Grasping how to use innovations in partnerships, (public-private, public-public, private-private), and business models to turn economically beneficial projects into bankable ones will be critical, as will

attracting all available sources of finance. The dialogue between the water and finance communities – which was strongly promoted at the conference – needs to be sustained and intensified with roundtables, databases, and other means.

Regardless of any increased role for the private sector in financing RRR initiatives, the public sector needs to remain strongly involved in the sector to fulfil its role of ensuring the provision of basic services equitably and inclusively. If, as seems likely, the public sector will retain the most influential role in the water and sanitation sphere, steps need to be taken to build governments' capacity in these areas, especially administrations in developing countries, specifically in planning, implementation, supervision, financial management and governance, including regulation and enforcement.

Circular economy strategies in water create opportunities across diverse sectors for water efficiency, resource capture, water reuse, and reduced impacts from pollution and climate change. The technology needed to promote a circular water economy exists, but prohibitive regulations, financial limitations, limited capacity of key stakeholders on circular economy concepts, and, in particular, social stigma remain major barriers to wide scale adoption. When considering wastewater reuse, a key barrier to building public acceptance can be described as the "yuck factor."

Countries have varying degrees of regulatory gaps or restrictions that impact water reuse and wastewater use. Regulatory discrepancies may represent barriers to change when a mismatch exists between the quality of treated wastewater and its use. Real-time water quality data can help drive innovation, fit-for-purpose use, and the adoption of the circular economy, in part by building trust with consumers on the quality of their water. In the case of Singapore's NEWater, a national multi-year politically backed campaign was necessary before treated wastewater could be accepted as a new source of drinking water. Innovative models of knowledge sharing can decrease the risk to enable innovation and the adoption of new circular economy-based solutions.

To achieve the SDGs, it is important to explore how best to reach different segments of society that are lagging behind in terms of water quality and water access. In such cases, it may be appropriate to consider decentralized water and wastewater systems, which can represent an opportunity to provide services to all segments of society, particularly poorer households in peri-urban and marginalized areas.

Decentralized technologies may often offer greater potential to extend water access to the poorest in society than centralized alternatives. Decentralized technologies tend to be more suited to specific, local conditions. Furthermore, implementation timelines are shorter and related capital investment and operating costs are comparatively lower with decentralized technologies. The financing of these technologies can, however, be challenging.

However, it was noted that the benefits of a decentralized approach are highly context-specific. By contrast, centralized systems benefit from economies of scale, so trade-offs, and specific objectives of implementing entities need to be considered. When planning and implementing decentralized systems, more emphasis needs to be placed on local stakeholder engagement, community acceptance and buy-in to ensure acceptance and sustainability. Governance is about co-creation, so by allowing people to co-create, local ownership is created.

We witnessed many encouraging examples of PPPs and RRR initiatives, focusing on the sanitation value chain. There is an appetite for innovative PPPs for risk sharing, as well as tariff and tax strategies, green finance and reuse-supporting regulations. The key question is how to take these encouraging examples to

scale. How does the sector make use of innovation in financing to incorporate the benefits of a more sustainable society for future generations into the cash flow analysis of today's projects?

Environmental team report

Lead: Danka Thalmeinerova (GWP), Javier Mateo-Sagasta (IWMI). Junior rapporteurs: Jessica Page, Koen van Gijn, Hannah Reid, Katharina Lange, Orn-uma Polpanich, Haoyu Wei.

Turning international policy into substantive change

Current challenges

Population growth, urbanization, industrialization, and the expansion and intensification of agriculture are key drivers of the increasing amounts of waste and wastewater being discharged into the environment, and of the depletion of natural resources. The challenges ahead call for quickly turning international policy into substantive change at the local level.

The worlds' population is growing rapidly and concentrating in urban centres, particularly in developing countries. Sanitation coverage is failing to keep pace with urban growth and, as a result, most wastewater enters water courses untreated.

The textile industry is one of the most water- and chemical-intensive, with pesticides used for growing fibre-crops, and dyes, detergents and emerging pollutants used in clothing production.

In most high-income countries and many emerging economies, agricultural pollution has already surpassed contamination from cities and industries as the major cause of water degradation (e.g. eutrophication).

The majority of marine pollution originates from land activities and is transported to the sea by rivers, and the vast majority of marine litter is made up of plastics.

In the face of continued population growth and increasing urbanization, amounts of waste and wastewater are set to grow. Policy makers – and society as a whole – will need to see waste and wastewater as assets rather than a burden.

Key findings

The resources, (water, nutrients, and organic carbon), found in the wastewater that is generated globally would be sufficient to irrigate and fertilize millions of hectares of crops, and to produce biogas to supply energy for millions of households. However, only a tiny proportion of wastewater is currently treated and reused safely.

Most existing water systems are linear (abstract-use-discharge). Wastewater frequently ends up in water bodies and is used downstream for food production, bathing or drinking. Indirect use of untreated wastewater in agriculture is by far the most extensive type of reuse. "We all live downstream" because food is produced with polluted water. The health and environmental risks of indirect or unintended reuse of wastewater are considerable. Guidelines for the safe use of wastewater in agriculture exist, but they are seldom adopted.

Fortunately, there are signs of change. Waste and wastewater are increasingly perceived as valuable resources: examples of resources being recovered from waste and wastewater with economic, environmental and health benefits are increasingly common.

For example, successful wastewater reuse and recycling in industry has been implemented in Durban (South Africa) through cooperation between factories and wastewater treatment plants to generate biogas and bio-fertilizers. The Sweden Textile Water Initiative grouped 42 Swedish partners, successfully reduced waste, recycled water and improved social and labour conditions for millions of employees in developing countries.

A growing number of cities and peri-urban areas report that the reuse of wastewater in forestry and urban green spaces can be easier for people to accept than wastewater for crop production.

In many developing countries, in the absence of sewers, wastewater is subject to onsite sanitation (e.g. septic tanks). Solutions for resource recovery from faecal sludge are increasingly being adopted in the developing world (e.g. production of charcoal briquettes for heating and cooking, and the production of compost for agricultural use).

Community engagement is instrumental for the success and sustainability of sanitation and reuse projects. Exogenous, top-down solutions have frequently failed, or have been boycotted by communities they were supposed to serve, (e.g. farmers damaging sewers to recover free, nutrient-rich wastewater they consider theirs).

However, the adoption and replication of reuse projects at necessary scale faces several challenges. Cultural barriers and distrust regarding health and environmental safety currently limit public demand for treated wastewater. Institutional fragmentation obstructs the design and implementation of effective reuse policies. Stringent regulatory frameworks constrain otherwise viable reuse options. The lack of appropriate tariffs, economic incentives and financial models undermine cost recovery and the sustainability of reuse projects: it is hard to encourage water reuse if it is cheaper to use other (subsidized) sources.

Another significant challenge is the presence of emerging pollutants in wastewater, including micro-plastics, antibiotics, and hormones. Major knowledge gaps persist in terms of: a) the impact that micro-pollutants will have (or are having) on human and environmental health; b) how to regulate and monitor micro-pollutants; and c) how to reduce the presence of micro-pollutants either at source or through treatment.

Recommendations on the way forward

Substantive change in water use is needed if the SDGs are to be achieved by 2030, specifically SDG6, 13, 14, and 15). The clock is ticking and deadlines are tight. An accelerated adoption of solutions is a must.

Water reuse is critical, and is set to play a major role in alleviating water stress. However, reuse needs to be implemented in conjunction with other actions, such as reducing water use and wastage.

Evidence suggests that a combination of approaches, (legal, economic, knowledge, awareness), is more effective in promoting the reduction and reuse of waste than regulation alone. In addition, funding for infrastructure and technology needs to increase substantially.

Consumption and production patterns need to change to reduce the use of dangerous and persistent pollutants. Once these pollutants enter the water cycle are very costly to remove. This responsibility cannot be left solely to consumers. Industry should be encouraged to use safe materials and improved manufacturing processes within regulatory frameworks. Regulations should also encourage industries to implement reuse and recycling strategies (e.g. setting zero-discharge targets).

What cannot be measured cannot be managed: investment in countries' capacities to generate comparable data on wastewater and sludge cycles should be prioritized, supported by standard definitions and methodologies. This would support public authorities to design well-targeted policies, while improving international comparability and global monitoring efforts, which will be crucial to assess the SDGs.

A fundamental review of urban planning is required. Wastewater treatment plants need to be designed for reuse rather than disposal to make them resource recovery plants. They should be located close to end users, and contribute to the education of local populations on the benefits of water reuse.

More broadly, information initiatives should demonstrate the importance of reuse and recycling, with targeted campaigns focusing on specific audiences.

Gaps between global commitments and local interventions need to be bridged. SDGs and the Paris Agreement – their frameworks, indicators, and monitoring mechanisms – need to be interpreted into pragmatic steps for implementation at local level.

Social team report

Lead: Anamaria Nuñez Zelaya (IADB), Gunilla Björklund (GeWa Consulting). Junior rapporteurs: Jasmine Burton, Sophie de Bruin, Roaa Hamid Mekki Hamid, Antje Heyer, Nina Ågren, Anna-Karin Söderström.

Social development – contributing to achieving the 2030 Agenda

How the interplay between gender, spirituality, urban development, human rights, and water security will contribute to achieving the 2030 Agenda, and human development more broadly, were all considered during World Water Week in the context of improving water management.

The wider participation of women and girls is increasingly acknowledged as one of the key prerequisites to successfully implement the human-centred reuse and redistribution of water and sanitation. However, gender inequalities that reduce women's and girls' access to resources disproportionately increase the negative consequences of the lack of service provision. In addition, only a small proportion of those employed in the sanitation sector are women. Steps to improve opportunities and working conditions for women in this sector include changing the way jobs are advertised, and addressing the gender pay gap.

Moreover, to understand the gender dimension, and its implications for the sustainable delivery of water and sanitation services, other aspects related to water, such as sanitation and hygiene, need to be included in the educational curricula of schools, (including the values and traditions of indigenous communities). Furthermore, the discriminatory nature of menstruating girls' experiences due to a lack of suitable environments in which to manage menstruation safely, and with dignity and privacy, often deprives girls of future economic and social opportunities.

Indigenous peoples' relationship to natural resources, in particular water, is essential to their way of life. Indigenous communities seek to protect the rights of water for physical and spiritual health. However, historically, the needs of indigenous populations have not been included in the development of water infrastructure. There is therefore a need for greater flexibility and dialogue with indigenous communities based on governmental support, (including greater respect for indigenous cultures, land and treaties), to ensure integrated capacity in wastewater knowledge and skillsets.

In terms of the world's main religions and faiths, all consider water as an essential element for life and stress the importance of water conservation. Considering this, religious leaders and other role models could be an effective vector within their communities to raise awareness and promote positive behavioural change related to water and sanitation challenges, and the efficient use of our resources.

How do we encourage citizens to monitor water quality? To engage stakeholder cooperation, long-term innovative participation forms, beyond simple data collection, are needed. Integrated approaches of community engagement, (based on trust and transparency), could form a basis for possible solutions to achieve sustainable water resource management.

This is particularly relevant in a context where all stakeholders, (public, private, civil society), along watersheds should cooperate to ensure the delivery of water-related ecosystem services sustainably and equitably. However, while most transboundary infrastructure projects are managed by all or most relevant riparian states, the degree to which some countries and local communities are involved in such projects is not always optimal.

Cities form one of the main environments where large numbers of challenges and opportunities are simultaneously possible. For most cities, water security represents a major challenge, especially given the negative effects of climate change. Imbalances between the supply of water-related services and demand for them are increasingly common, especially in fast-growing cities with high rates of informal urbanization in peri-urban areas. Infrastructure design and construction often fails to meet rapid population growth. Encouragingly, in the past decade, some water utilities have taken a leadership role in urban water governance to support wastewater management and reuse with a view to delivering services.

Moreover, there is a need to bridge the gap between science and technology on one side, and policy making on the other to achieve SDG 6. Again, cities offer promising potential test grounds for some of the most innovative technologies such as loan payments that use mobile services, and online platforms throughout the management process, including data collection. Challenges to the wider implementation of such platforms lie mainly in, for example, the technical literacy of customers and field workers. Addressing such issues requires greater capacity building and social accountability from water operators and agencies.

Differences in water provision between urban and rural areas are highlighted by the criteria and principles of the UN human right to water and sanitation (HRWS), suggesting even tougher challenges are ahead in terms of achieving the SDGs.

The main human rights' including the HRWS principles are non-discrimination and equality, participation, access to information and transparency, accountability and sustainability. The HRWS' criteria include availability, physical accessibility, quality and safety, affordability and acceptability, dignity, and privacy. To successfully implement the HRWS approach, we need to build sanitation services, maintain focus on informal urban areas and scattered rural areas, and promote quality, sustainability, and accountability.

How closely related are issues surrounding water and conflict? The interlinkages between a changing climate, water issues and conflict, sometimes even violent, are unfortunately all too common at regional and local levels. Although research in this area is increasing, policy remains lacking. Moreover, water security links directly to state stability and the viability of states, as economic development is impossible without access to secure water.

A central practical problem is socio-economic fragility: vulnerable sections of society are disproportionally affected by natural disasters, (people who lack the means to cope with the impacts of extreme weather conditions). Women and rural population are two examples. Fragility diminishes people's capacity to cope with climate and water risks. Building resilience is therefore critical. Thus, since climate change impacts

security in many ways – water, food, migration – governments and other stakeholders need to pool efforts to manage the impact of climate change.

Recommendations

The effects of climate change will impact the poorest hardest, primarily through health (food) and sanitation issues. One of the effects of gender, menstrual hygiene, (or the possibility of improving it), will impact the development of vulnerable populations. Implementation processes need to be democratic and not only include data collection. The need for capacity building, and education and awareness building are still important, but should be dealt with from a broad, integrated approach.

The 2017 seminars

Torkil Jønch Clausen on behalf of the Scientific Programme Committee

The nine SIWI Seminars addressed key aspects of the Week's theme "Water and waste – reduce and reuse". They were co-convened by SIWI and 40 international organisations, and featured some 40 keynote presentations, 60 presentations and 20 posters selected from 440 submissions. Roundtable discussions, high-level panels, field visits, and more ensured high levels of participation throughout the Week. Brief key messages from the Seminars are provided below. Short summaries of each seminar can be found at worldwaterweek.org.

The gender dimension of water and waste – moving from symbolic to meaningful participation

Universal access through gender-sensitive, safely managed water and sanitation is a prerequisite for achieving Agenda 2030. Including women in decision-making remains inadequate in practice. Although policies exist, they are often not implemented, partly due to a lack of adequate regulatory mechanisms. Change in community attitudes towards women in leadership roles is a major factor in empowering women to be part of decision-making bodies. Bringing water, sanitation and hygiene (WASH), and Integrated Water Resources Management (IWRM) closer together, and linking SDG 5 on gender and SDG 6 on water and sanitation could help.

For women to be respected and involved in WASH management and IWRM, we need to move from symbolic to meaningful participation. This is not just about numbers: monitoring and disaggregated data need to go beyond the quantitative, and include qualitative measurement of intangibles such as trust, empowerment and participation.

Water in the circular economy – creating opportunities, facing challenges

The circular economy creates new opportunities across sectors for water efficiency, resource capture and water reuse, and for a reduction in impacts from pollution and climate change. Technologies to promote a circular water economy exist, but social stigma, prohibitive regulations, financial limitations, and a shortage of trained staff are major barriers to wide-scale adoption.

Real-time water quality data can help drive innovation and build trust with consumers. Integrated waste solutions, partnerships with other industries, and decentralized models enable more locally tailored and innovative circular solutions. Articulating the value of water is essential to proactively drive adoption before water becomes scarce. The future of the circular economy calls for decentralized models to expand partnerships into new industries, including agro-chemical and pharmaceuticals.

Wastewater and health - managing risks, seizing opportunities

SDG Target 6.3 offers an opportunity for an ambitious systems approach to protecting water and health. Far too many chemical and pathogenic pollutants enter the water cycle today and remain untreated before

water is disposed of or reused. We need to better understand, monitor, and address all dimensions of wastewater management to reduce health risks and optimize controls. Health impact assessments and sanitation safety plans are essential tools to prioritize actions.
Effective management of liquid waste and faecal sludge calls for national standards and policy frameworks for treatment and reuse; for improvement of sanitation interventions and wastewater treatment; for decoupling technical and natural recycling loops to avoid chemical and microbial contamination caused by reuse; and for addressing emerging pollutants such as pharmaceuticals to reduce future health impacts. Future environmental changes, such as climate change, should also be addressed.

The wastewater crisis - do new financing models for resource recovery offer a solution?

Resource Recovery and Reuse (RRR) projects tend to be economically viable and will be needed to achieve several SDGs, but greater effort is required to internalize their benefits for society and the environment to make them bankable.

The enabling environment for RRR is often constrained by policies, legal and regulatory frameworks, not only in the water sector but also in health, energy, and agriculture. While the number of encouraging examples of successful projects is increasing, how do we take these to scale - and how do we mainstream their success?

Innovative Public-Private-Partnerships are needed to enhance risk sharing, private financing, tariff and tax strategies, green finance and reuse-supporting regulations. Many RRR projects lack the value chain approach of rigorous market data throughout the supply chain, more “business thinking” would address this.

Liveable cities - smart water and waste management solutions are the way forward

Smart solutions require a holistic approach to water management, but fragmentation of institutions is a serious barrier to this. Best practice for implementing smart solutions indicates that a problem-based, participatory approach is critical when formulating and tackling urban water challenges. Informal settlements “pay more and receive less” in terms of urban water services. Relocation is not the solution, but rather an approach that integrates informal settlements in a way that recognizes their uniqueness; decentralized water systems offer this opportunity. Recognizing that water lies within a system of systems in cities, (e.g. transport, energy, urban planning), we need to be proactive in informing and influencing urban development, and apply an urban-integrated-systems thinking paradigm to achieve SDGs 6 and 11.

Safe reuse of wastewater in agriculture - harnessing opportunities while increasing social acceptability

Between 10 and 15 per cent of irrigated cropland globally uses indirect and untreated wastewater; treated wastewater is only applied to 0.3 per cent of irrigated cropland.
Wastewater should be considered a resource that can provide sufficient nutrients for growing most crops. This contributes to achieving SDG 6.3, assuming potential health risks can be controlled.
Making resource recovery and reuse a treatment goal, while protecting health, calls for a change of mentality. This requires increasing social acceptability and trust along the entire value chain - from waste

to food. And in the process, we need to be responsive to the diverging interests and needs among sector stakeholders.

Water and waste management - the textile industry as compelling case

The textile sector is converging its efforts to address environmental challenges, but still needs a common roadmap towards achieving the SDGs. A clearer, unified vision is needed in the sector to support better understanding of where it should be heading.
Responsibility for water needs to be well-defined and understood in the sector, implying that systemic barriers to good governance in global supply chains, and effective international development approaches, have to be addressed.

The textile sector must ask the bigger questions regarding business models to fulfil their obligation towards SDGs 6 and 12, and in so doing, move away from conventional "corporate social responsibility", to develop and inspire sustainability values in all operations. Key to this are ESG indicators - Environment, Social and Governance.

Water pollution regulations - opportunities from source-to-sea, but challenges remain

A mix of economic, regulatory and administrative tools exist, but they require moral persuasion and policy coherence across sectors to achieve desired outcomes.
Improving water quality from source-to-sea requires managing point and diffuse sources of pollution, and integrating land use planning and water quantity management.
Contaminants of Emerging Concern (CECs) challenge traditional policy regulations and existing wastewater treatment infrastructure. Essential tools to guide the formulation and implementation of regulations include innovative monitoring methodologies; safe effect-based thresholds values; improved international cooperation; and source-directed, precautionary policies.

Governance of water and waste – the key to sustainable development?

We have the theoretical and structural elements in place to revitalize IWRM and achieve SDG 6.5, but we need to concentrate on accelerating the actual work and improves outcomes for people.

Leadership is vital to make progress, from politicians, professionals and communities.
Clear data, collected regularly, and available openly, are crucial for transparency and monitoring; if people know their roles they can achieve great things together.
We need to keep our moral compass: behave ethically, promote integrity and fight corruption.

We're on the same spaceship!

Swedish astronaut Christer Fuglesang opened World Water Week by reminding us that we are all on the same spaceship and need to think circular. That is what the theme of the Week was all about, and the Seminars demonstrated that. There is no such thing as waste, only resources: even brown can be gold! If we apply good governance to implement a circular economy, we can improve health for people and the environment, and help to achieve the goals of the 2030 Development Agenda. The Seminars noted that things are happening – so let's build on what has already been achieved.