



POSITION PAPER 4<sup>th</sup> AIWW 2017

## **Water and 9 Billion People: Creating a Circular and Resilient water environment in high density living areas**

**30 October – 3 November 2017**

Water management has entered into a new era of complex and unpredictable risks, challenges and opportunities. As economies grow, so does the demand for water and the impact on world's resources. With a growing world population, climate change and urbanizing demographic and economic changes, global leaders and water managers need to address multiple issues to secure sustainable use of water and environment for now and in the future. The approach to prevent water crisis will be determined now!

### **Prevention of Water crisis; top level concern**

Water becomes an increasingly scarce source. By 2050 the planet is to exceed 9 billion people and already 2 billion people have a lack of access to clean water while 4 billion people are affected by severe water scarcity. Water scarcity, regional shortages and water-stress lead to regional economic degradation and geopolitical conflicts. Water crisis affects economies and demands crisis management. Future leaders have to be prepared for crisis management and face an enormous task to cooperate in leadership and to develop enough quality water for future generations.

### **Leadership and Management**

The new water era requires a new impetus of leadership, strategy and management to change and redefine key areas for action and investment. As the year 2017 is considered to be kick off year for progress and achievement of UN Sustainable Development Goals and the 21<sup>st</sup> Conference of the Parties (COP21) results, Amsterdam International Water Week 2017 will be the platform to define and implement a 'roadmap of change' in resiliency, optimal resource efficiency and transition to circular economies defined by global leaders, managers, young professionals and new-tech innovators.

### **Cities changing the game**

A game changing and integrated municipal strategy is needed to secure sustainable water, fair food and efficient energy use. Meanwhile business strategy should drive economic growth in resilient environments capitalizing on adaptation of climate change opportunities. Urban areas are uniquely positioned to enable integrated solutions, spill of energy, nutrient recovery and water sanitation. City administrations have a central role to play in the transition to sustainable future as managers of interdependent services, utilities as network distributors in the center of water ecosystems serving



industry sectors and households. In transitioning to a blue economy with water-waste-energy nexus, cities, utilities and their industries must be prepared to start a new game of business and leadership. The challenge is to be proactive in seeking new technologies, investments, solutions, partnerships and implement joint business opportunities.

### **Regional development, Global impact**

Although cities lead the roadmap to change most large cities in the world are positioned along or as the endpoint of river basin catchment hosting regional local economies and communities that heavily depend on resources. Regional supply and sustainable production go beyond gates of individual production plants. This requires involvement of multiple value chain stakeholders sharing interest in local resource demand including: (public) utilities, product chains, suppliers and consumers. Catchment regions also being home for small holder farm suppliers serving commodity production and global supply chains therefore require specific interest from water stewardship and leadership perspective. Ultimately local resilience will impact global supply demanding technological implementations to overcome resource-related constraints and climate change.

### **Self-sufficiency and scale**

To build political momentum and mobilize urgent practical action to deliver on local water and related challenges the need for collaboration and engagement with financial institutions, private sector and governance becomes more important. Adaption of technology will only kick off in correspondence with enduring strategy, policies and solid investments. The provision of local water solutions and implementations is a core development issue that needs the appropriate political leadership and financial attention. Not only from a risk mitigation or climate cost agenda but rather a regional development and economic growth perspective.



## The 4 Leading challenges in the new era water-system management for 2017 are:

### **AIWW 2015: Implementing efficient use of resources and resiliency**

Current events as floods, droughts and trends like mass-urbanization, ageing of critical infrastructure and disruptive industrial supply chains speed up the need for integrated innovative solutions and sustainable implementations for resource utilization and resiliency. The 3<sup>rd</sup> edition of AIWW in 2015 addressed the theme: 'Integrated solutions for a circular economy and resilient cities'. A platform for debate with potential new alliances and fresh ideas: connecting industry, science, business, policy and technology. The event crossed borders between water and sanitation, delta technology, food, agriculture, finance and governance bringing together a unique mix of professionals conducive to the transition to a circular economy and resilient cities.

### **Important conclusions at AIWW 2015**

#### **Implementations**

Which technical innovation or best practice will be leading the pace considering new partnerships, technical advantages and new perspective on financial models?

- Innovate partnerships and new service concepts will be the driving force for change;
- Promising innovations in the water sector need stronger promotion outside the water sector.

#### **Investments**

Which innovative financial mechanism will be leading the pace considering shared prosperity, value and growth, economic efficiency and multiparty contracts?

- Leading investors need more confidence in water projects to drive new climate resilient infrastructure;
- Systems design is needed to value water, new business models and descent contracts should secure revenues.

The new era of water system management will scale up economic viable implementations and drive the current major themes:

### **Water efficiency and Value**

Water can be turned into a major value driver in almost any industrial process and the extraction of raw materials. Aggregation of local organic waste water flows will create vibrant local markets for fertilizer components. But also water treatment, retention, cooling, biodiversity and energy neutral cities as value drivers.

*Keywords: value chain, growth, water and energy efficiency, bankability, water footprint, water stewardship, compliance, viable investments, economy of scale, Fixed Income Investment, asset management, finance strategy and implementation, blue economy and resilient business models*



### **Water management and Resilience**

Water management and resilience requires questioning water as the leading development in climate adaptation. The involvement of business, industries and citizens as essential part in developing and realizing water and climate resilient cities maintaining rich habitat, infrastructure for biodiversity, water allocation, ecological structure and resilient flood protection.

*Keywords: climate change & water resilient (urban) structure, collaborative and transformative adaptation, transition infrastructure and (re)designing with water, adaptive water allocation and resilient industries, infrastructure and utilities*

### **Institutional transition and Governance**

Success in the development of a circular economy dynamic will require individuals, organizations and companies to go beyond their traditional silos, explore new solutions and develop more partnerships and interactions. How much can we use and reuse to what purposes, what are the reasonable amounts, who benefits in the end, what are the global dependences and understanding of water stewardship by geographic perspective.

*Keywords: (social change) resilience governance, institutional capacity, utility benchmarks, water partnerships, governance, partnering and transboundary dialogue, utility and ecosystems*

### **Innovative water system implementations**

Technological innovation will boost Water Cycle Management and Nexus. Wastewater will no longer be a redundant stream but becomes a resource for entirely new products with impact on cleaner water and reduction in energy consumption. (De)centralized water treatment technology will deal with micro pollutants while recovering biogas, nutrients and raw materials from waste water and raw drinking water. Meanwhile this theme will also cover: resilient city design, new service concepts the impact of new-tech developments and material markets

*Keywords: toxicity, factory footprint, recovery of valuable materials like calcium pallets, bioplastics, alginate and fertilizers, energy and nutrients, ammonia from digestate, solid dry brine from desalination, alginate from granular sludge, management of micro pollutants, desalination, decentralized treatment*

Leading innovators from responsible municipal operators, industrial system developers, utilities and production chain designers will improve water system management. Equally important, municipal and industrial leaders and investors will rethink their institutional approach to water system management. The new era asks to consider the potential and ability to extract energy, nutrients and reuse water, preserve the minimum environmental flow and maximize the benefits over deployed assets with different levels of service, pricing and optimized resource efficiency and allocation.

### **AIWW2017 Program; Mix, Meet and Match**

The Amsterdam International Water Week will be held for the fourth time from October 30th till November 3th in 2017. The event is built on centuries of Dutch experience with water, 50 years of experience with the Global Water Exhibition Aquatech and on Amsterdam, not only a beautiful hosting



Metropolis, but a city which lives with water since its origin. With a total of over 856 exhibitors, showing latest technology in water treatment and recoveries Aquatech attracts over 20.000 visits by visitors from 139 countries. The perfect venue to showcase best practice solutions and cases for viable investment to connect water resources, drinking water supply and waste water treatment in one infrastructure model.

### **Success in developing a circular economy**

The results and conclusions of AIWW 2015 combined with the achievements of COP21 in Paris made clear that building a circular economy and resilient living environment is a collective goal, requiring connected stakeholders and immediate actions. Success in the development of a circular economy dynamic will require organizations, companies and governments to go beyond their traditional silos and develop more partnerships and interactions and timely scale up the implementation of joint measures.

### **AIWW Program 2017: Mix, Meet and Match**

AIWW 2017 will show leadership in thinking and connect strategy with solutions. Showing practices in a technology enabling environment with opportunities for networking, establishment and reactivation of partnerships and learning. Hosting leading countries, companies and municipalities recognizing the interconnected nature between urban planning, ecological design, water-waste-energy management, resilience, health and the trade-offs and synergies between them. AIWW 2017 program focuses on current challenges, cases with appointed case-owners being a true platform for solutions. AIWW is one of the leading global water event, offering a trending calendar setting for related and successive other events like Singapore International Water Week and Stockholm World Water Week.

The program is built around **leadership debate** and **high level panels** focussing on next era strategy and water **management cases** covering current and future issues for cities, utilities, river basins and industries to be discussed in a surrounding platform of International experts and stakeholders.

**Keynote speeches and Leaders Fora** with leadership presentations and game changers from cities and industry, best practices implementations and lessons learned will be input for integrated solutions for cases and dialogue about the shared challenges. Not only from the water sector, but also from other sectors in transition like energy, transport and IT. AIWW will host:

1. **Keynote speeches and Leaders Fora** with leadership and game changers presentations,
2. **Field labs** in which special themes and cases are presented and discussed. We will invite delegates to help to prepare the workshops, to make workshops efficient,
3. **Round table meetings**, forming Unique teams of multidisciplinary experts to discuss real cases and formulate new possible solutions, partnerships and financial models and
4. **Stage for Young water Professionals** who will address their findings, vision, concerns and ideas to connect with Cities, Utilities and Industries,
5. **Matchmaking** on integrated (un)conventional solutions,
  - Open community with dynamic participation



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- Start-ups and new tech innovation stage
- Rethinking new generation solutions and implementations
- 6. **Partnership cases**, public private partnerships (PPP) platform gathering,
- 7. **Global Water Exhibition Aquatech**: 856 exhibitors, showing latest technology in water treatment and recoveries Aquatech attracts around 19.000 visits by visitors from 139 countries,
- 8. **Showcase Tours**: Aquatech Amsterdam 2017: world's leading trade exhibition for process, drinking and wastewater with focus on innovation,
- 9. **Excursions** to real life cases applying climate change resilience and circular economy practices.