

Coordinated management from source to sea – in the Baltic Sea and other basins

Workshop report



Lake Gorssajavri, Sweden, connected to Baltic Sea by Torne river, bordering Sweden and Finland

Report from a workshop held September 13, during IWA World Water Congress in Copenhagen - 11-15 September 2022

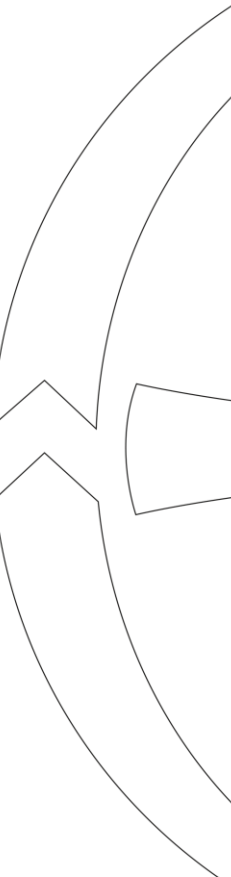
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Land meets sea in Næstved, Denmark. Photo: Colourbox.dk/Knud Erik Christensen

Photos by Anders Hansen, Miriam Feilberg, DANVA and Colourbox.dk



1. Introduction

The theme for the 2022 IWA World Water Congress and Exhibition held in Copenhagen was “Water for smart liveable cities”. As urbanization means more people living in cities, and a great number of the major cities in the world are located near the oceans, this raises the issue of the effect of human activities on our seas.

The source-to-sea approach offers a holistic approach to prevent pollution of our seas, from land-based activities, thus aiming to ensure coordinated implementation of the Sustainable Development Goals on water and sanitation (SDG 6) and oceans (SDG 14).

In this workshop experts in several fields related to the source-to-sea approach offered their input on how to achieve these Sustainable Development Goals, with the Baltic Sea Region being the key case.

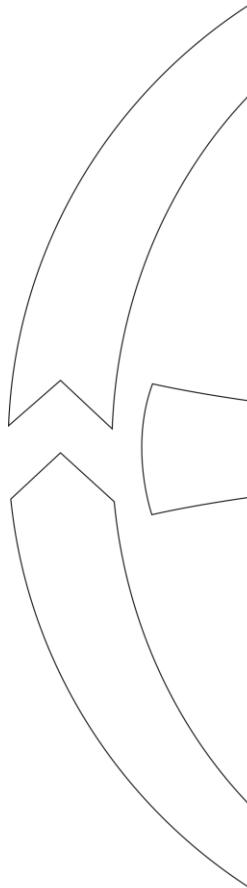
Participants in the workshop were invited to share their input through roundtable discussions lead by the speakers, as well as during a panel discussion of the key messages from the roundtable discussions.

The workshop was concluded by Torgny Holmgren, Executive Director of SIWI - Stockholm International Water Institute.

The aim of this brief workshop report is to summarise the outcome of the workshop and to present these key messages to the UN Water Conference to be held in New York in March 2023.

More detailed messages from speakers, as well as their PowerPoint presentations, can be made available at request.

Many thanks to all who participated in the work!



2. Background

Our seas suffer serious degradation from land-based activities in basins and cities; only a holistic approach from source-to-sea can reverse that.



Coastalisation is a growing concern. Here, Aarhus Ø, a new quarter on the coastal side of Aarhus, Denmark. Photo: Colourbox.dk/Knud Erik Christensen

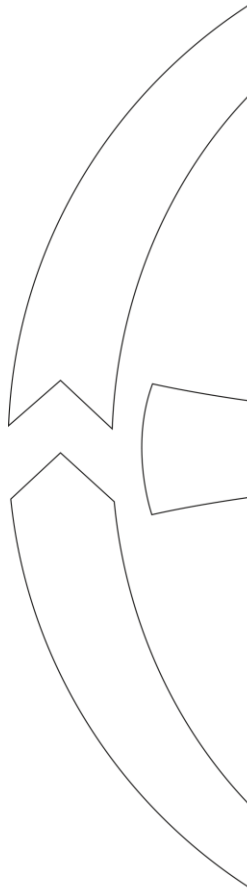
The Nordic/Baltic region is a case in point. It is highly developed with strong governance frameworks and organizations to facilitate cooperation, such as the EU Water Framework Directive, EU Strategy for the Baltic Sea Region, and the Helsinki Convention. But we are still facing serious challenges related to water quality, eutrophication, plastics and pharmaceuticals, emerging pollutants, pesticides etc.

With this workshop, our purpose was to discuss policies and solutions to address the burning water and environment challenges from source to sea (and vice versa from sea to land), with the Baltic Sea region as the prime example.

Our aim was to share best practices from the Baltic Sea Region and engage with other regions and transboundary basins on the impact of urban water users and other basin stakeholders on water and environment.

The purpose of the presentations and roundtable discussions was to bring together experts, stakeholders and interested parties.

They shared their experiences and visions for source-to-sea management, raised awareness about the issues, and discussed challenges and solutions at the local, national and international levels in achieving coordinated implementation of SDG 6 and SDG 14.



3. Outline of the workshop

The session was opened by a brief overall stage-setting by Moderator, Torkil Jønch Clausen, Chair of the Action Platform for Source-to-Sea Management. Mr. Clausen introduced issues to be discussed and the source-to-sea approach, as well as the experts and speakers in the panel.

This was followed by a stage-setting keynote on “Union of the Baltic Cities Sustainable Cities Commission” by Agnieszka Ilola, Special Adviser, Union of the Baltic Cities (UBC) Sustainable Cities Commission. The keynote focused on how the UBC network provides a dynamic international platform for cities to exchange experiences, best practices, and innovations on sustainable water resource management.



Agnieszka Ilola of the Union of Baltic Cities presents her keynote speech

4. Key messages from panellists

This keynote was followed by a series of 3-minute pitches, where experts in the field shared their perspectives on the issues facing source-to-sea management. The speakers and some of their main points are:

Lars M. Svendsen, Project Director, Aarhus University, Denmark

- Most parts of the Baltic Sea open and coastal waters are still below good status regarding eutrophication.
- Transboundary nutrient inputs to the Baltic Sea via rivers and atmospheric inputs calls for cooperation with neighbouring countries, international organizations such as the Helsinki Commission (HELCOM), river management boards, international organizations, and conventions.

Ivar Annus, Tallinn University of Technology, Estonia

- Holistic measures to improve spatial planning and operation of existing urban drainage system are needed to face the challenge.
- A paradigm shift in urban planning moving from fragmented individual site-based planning to holistic urban catchment methodology is introduced.
- Transfer from reactive to proactive urban water systems management enables to decrease the pollution load to the receiving water bodies.

Frank Zhang, Swedish Agency for Marine and Water Management

Frank Zhang, Swedish Agency for Marine and Water Management talks about experiences in the Baltic Sea



- Source-to-sea management is a mindset and a more catchy way to say holistic and coordinated water and marine management.
- The best practices and lessons learned from the holistic water and marine management in the Baltic Sea region could be very valuable for other countries.
- Integrating also economic and social (in addition to environmental) aspects in a source-to-sea approach is a necessity to achieve sustainable development.

Despo Fatta-Kassinou, University of Cyprus

- The Mediterranean Sea is undergoing intense coastalisation and urbanisation, leading to increased waste production and anthropogenic pressure along the coastal zone. Appropriate waste and wastewater infrastructure are often lacking.
- The Mediterranean Sea is under significant pressure from a blue growth strategy driven by growth in marine traffic, tourism, and oil-gas exploration.
- Coordination between Member States (MS) and collaboration between MS and non-EU countries, in the Mediterranean basin, is critical.

Kai Bester, Environmental Science, Aarhus University, Denmark

- Main point pollution occurs via the wastewater treatment plants that are not removing pharmaceuticals.
- Inputs are especially relevant for systems like the Scandinavian fjords (closed, partially shallow waters).
- Inputs are also relevant for the major rivers: pollution from Rhine/Elbe influence the eastern part of the North Sea.



Kai Bester, Aarhus University with examples of point pollution.

5. Roundtable discussions and panel debate

The pitches were followed by a roundtable discussion moderated by Miriam Feilberg, Head of Climate Change at DANVA – the Danish Water and Wastewater Association. The roundtable discussion aimed to discuss the following questions:

- What are the most critical issues to be addressed by basin, city, and utility managers?
- What are the main challenges to break down current silos between the freshwater and ocean communities?
- What are the generic lessons learned on how coordinated management from source-to-sea can be achieved?
- How can we convey the Copenhagen S2S to the UN 2023 Water Conference?

6. Messages from roundtable and panel discussion

The messages and inputs from the roundtables were many and varied. Here follows some of the key inputs from the roundtables (in *Italic*) and the responses from the panels.

Drop the issues – we know enough – let's just get started

- Yes, we generally know enough to get started. Yet more data and scientific research is still needed.
- Tools are needed to carry out measures that we know now are correct.

Drop the silo thinking – cooperation, both nationally and across borders is necessary.

- The Baltic Sea an example of gains from working together.
- We must work with all stakeholders. Implementation of polluter pays principle is important in this context.

Remember the farmers and the economy

- Farmers are important and often perceived as ‘difficult’, but we must reach out to them.

Appropriate regulation needed

- Incentives matters, this is about both regulation and money.
- Regulation is necessary. But over-regulation chokes initiative.

7. Concluding remarks from the panellists:

Agnieszka Ilola	Environmental data is very important. Benchmarking as part of international cooperation is relevant. Having citizens on board in cities, is imperative.
Lars M. Svendsen	Agriculture needs to be strongly involved.
Ivar Annus:	Cooperation. Cooperation. Cooperation.
Frank Zhang:	The Baltic Sea is an example of gains from working together, but also a case that demonstrates how long time the sea takes to recover – thus, a call for urgent action.
Despo Fatta-Kassinou:	Citizen engagement. Policy uniformity.
Kai Bester:	We have the technology but need to tune it. Storm water is a huge black box.

8. Summary and key messages

As the above paragraph shows the discussion was varied and covered many aspects of the source-to-sea approach. Finally, Torgny Holmgren Executive Director of SIWI - Stockholm International Water Institute summed up the key messages of the workshop:

- There is no quick fix. Marine environments are slow to react. We know enough – let’s make it happen!
- Coastalisation is a new term – more and more people living by coasts, adds pressure to the marine environment.
- Climate change also impacts on water quality, water bodies can go from being carbon sinks to carbon emitters.
- We must think SDG’s together, in particular SDG’s 6 and 14. Create incentives to make actors change upstream issues to protect downstream effects. Break down the siloes
- We must change how we plan urban areas in the future to make these links.
- Non-point pollution from farming is still a major issue, and we must involve farmers to overcome this.

9. Biographies of speakers

Dr. Torkil Jønch Clausen, International Water Adviser, Session Chair

Dr. Torkil Jønch Clausen is **currently**, Chair of the Action Platform for Source-to-Sea Management and Chair of the Technical Reference Group for the Africa Water Infrastructure Program (AIP)

He **recently** served as Chair of the Scientific Programme Committee of the World Water Week in Stockholm, Chair of the Global Framework on Water Scarcity in Agriculture (WASAG) and Governor of the World Water Council.

Previously he has been Director at DHI, Adjunct Professor at the Technical University of Denmark, CEO of the Danish Water Quality Institute, and Counsellor in the Danish Ministry of Foreign Affairs



Agnieszka Ilola, Union of the Baltic Cities Sustainable Cities Commission, Session Co-chair

Agnieszka Ilola is coordinating activities and strategic programmes of the Union of the Baltic Cities Sustainable Cities Commission. She is working with topics related to integrated urban water management, resource efficiency and climate change adaptation. She is passionate about creating new ideas on how to make cities more attractive places to live and provides them with a platform for discussions and sharing best practices on international level. To round up her work, Agnieszka develops new solutions on existing challenges and helps cities to find suitable funding instruments to finance their journey to become more sustainable and resource efficient.

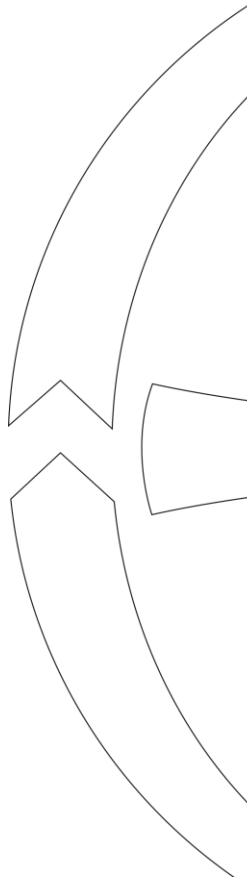
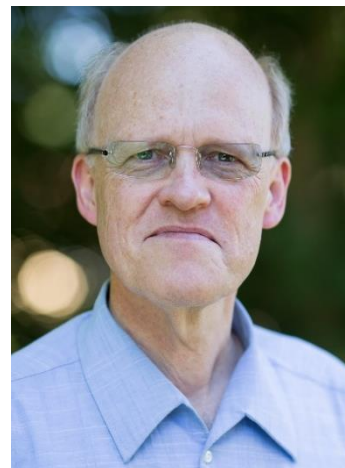


Lars M. Svendsen, Project Director, lic. Scient.

Lars M. Svendsen is chair of HELCOM RedCore DG and project manager of HELCOM PLC projects (since 2010) focusing on quantifying and assessing development in inputs, sources and pathways of water- and airborne nutrient inputs to the Baltic Sea. He is evaluating HELCOM countries progress towards fulfilling nutrient reduction targets set to reach good status of the Baltic Sea.

Previously he was chair of HELCOM LOAD and vice chair of HELCOM MONAS groups.

Lars M. Svendsen is project director at DCE, Aarhus University and working in international marine conventions since 1993.



Ivar Annus, Professor, Tallinn University of Technology

Prof. Ivar Annus is currently working in Tallinn University of Technology as a professor in urban water systems and Vice-dean for Academic Affairs in the School of Engineering. He has profound experiences in leading and coordinating international and national R&D projects in urban water systems with the focus on climate change adaptation and mitigation measures, risk management, real-time control, modelling and digitalization.



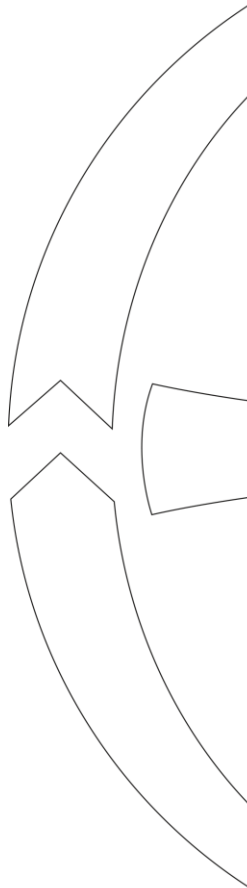
In addition, he is a member of the higher education assessment committee of Estonian Quality Agency for Education and member of the International Society for Engineering Education.

Frank Zhang, Swedish Agency for Marine and Water Management, Sweden

Mr. Frank Zhang is currently working at the Swedish Agency for Marine and Water Management (SwAM) as a senior analyst in the unit for international affairs. His main responsibilities at the agency includes coordination of the agency's international cooperation on Source-to-Sea management, Implementation of the agency's bilateral cooperation with China and South Africa. He is also supporting Sweden's chairmanship in the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the Sida-financed development project "SwAM Ocean" in Eastern Africa.

**Dr. Despo Fatta-Kassimos, University of Cyprus, Department of Civil and Environmental Engineering**

Dr. Despo Fatta-Kassimos is a Professor at the Department of Civil and Environmental Engineering, and Director of Nireas International Water Research Center, at the University of Cyprus. Her research focuses on wastewater treatment and reuse, contaminants of emerging concern, and antibiotic resistance in the environment. She was the Chair of the Scientific and Technological Advisory Board of the European JPI 'Water Challenges for a Changing World' (2015-2019), the Chair of the COST Action NEREUS ES1403, and the Coordinator of the H2020-MSCA-ITN-2015/675530/ANSWER project, on the challenges of wastewater treatment and reuse. She is Editor of the Journal of Environmental Chemical Engineering, and Associate Editor of Water Research, Elsevier.



Kai Bester, Bonus Cleanwater, Denmark, Professor environmental Chemistry, Aarhus University

Kai Bester is professor for environmental chemistry focusing on organic micropollutants: Emissions from primary sources; reactions and partition in current and future environmental technology (wastewater treatment); fate and effects in the environment including the marine ecosystems. To solve environmental problems, KB is applying advanced biological and chemical treatment as well as source mitigation.



Torgny Holmgren, Stockholm International Water Institute, SIWI

Mr. Torgny Holmgren is Executive Director of SIWI - Stockholm International Water Institute.

Former Ambassador at the Swedish Ministry for Foreign Affairs and Head of the Department for Development Policy.

Mr. Holmgren is an economist from Stockholm School of Economics with experience from the Swedish ministries of Finance and Industry. He served at the World Bank in Washington DC 1995-2000, at the Board of Directors and in the Research Department in the Chief Economist's Vice Presidency. He has been Head Secretary of the Stockholm-based international Expert Group on Development Issues (EGDI) and has served as economist at the Swedish Embassy in Nairobi, Kenya. He has country experience from Africa, Asia, Europe and North America.



He is a Board member of Swedfund International, chair of the International Centre for Water Cooperation, member of the Swedish Leadership for Sustainable Development, the Expert Group for Aid Studies (Sweden), and the Board of World Water Council (permanent observer). He served as Sherpa in UN Secretary-General's High-level Panel on Global Sustainability.

Miriam Feilberg, Head of Climate Change, DANVA - Danish Water and Wastewater Association, facilitator

Works with Danish water and wastewater utilities on climate change adaptation, reduction of the water sectors' emissions, and implementation of the SDGs in the water sector. She took part in planning the IWA World Water Congress and Exhibition in Copenhagen related to these topics, and is also working on:

- Promoting innovation and green transformation in the Danish water sector.
- Integrated urban water management.
- Knowledge sharing and communication.

