WMCC 2016
Water Management in Cold Climate

EWA Conference
Water management: Challenges in cold climate

EWA
EUROPEAN WATER ASSOCIATION

Post-Conference Report
Spitsbergen, June 25-27, 2016

WWW.EWA-WMCC2016.ORG

Norwegian University of Life Sciences

UNIS
The University Centre in Svalbard

Norwegian Water Association

The Research Council of Norway

1. Introduction and background

Water resources management, water supply and wastewater treatment have special challenges in the cold climatic regions. The changing climate has resulted in new temperature and weather pattern extremes and results in temperature changes or hydraulic flooding. All new conditions will have impact on how good performance a wastewater treatment system has. Frozen water resources, highly variable surface overflows and influents to treatment utilities, need to build larger treatment infrastructure and challenges in achieving treatment targets due to retarded efficiencies in winters are examples of such challenges.

The challenges will be even severe with Climate Change impacts, further exemplified by e.g. more rain in shorter periods leading to flash floods and increased discharges, increase in color (NOM) in natural waters requiring improved treatment facilities.

Thus, a conference on "Water and wastewater management – challenges in cold climate" was organized with the support of the European Water Association (EWA). It took place in the island of Spitsbergen on June 25-27, 2016.

A meeting with Water Magic project partners from the US, Canada, South Korea, China and Japan was organized on June 26th to review and discuss curriculum and textbook structure.

2. Objectives of the EWA-WMCC 2016 conference

As the first and only international conference so far with the focus on water and wastewater management challenges in cold climate to be held in Norway, the objectives of EWA-WMCC 2016 conference were to:

- Assemble scientists worldwide who are conducting research on WMCC in an informal setting that fosters free exchange of ideas;
- Foster discussion about needs and opportunities for research directions in WMCC and promote interactions and collaborations among scientists from industry and academia;
- Provide a forum for students to present their research results through oral and poster presentations.

3. EWA-WMCC 2016 conference participants

Despite the relatively remote location of the EWA-WMCC 2016 conference venue, attendees from 18 countries travelled to the conference, illustrating the successful promotion efforts of the

organizing committee. Over two companies provided sponsorship funding to help fund the conference.

The conference attracted 109 attendees (Annex 2 contains list of participants) from different countries, covering four continents: Africa, the Americas, Asia and Europe (Figure 1). Attendees originated primarily from Norway. We had a broad range of participants from academia and industry, including 10 PhD students from NMBU.

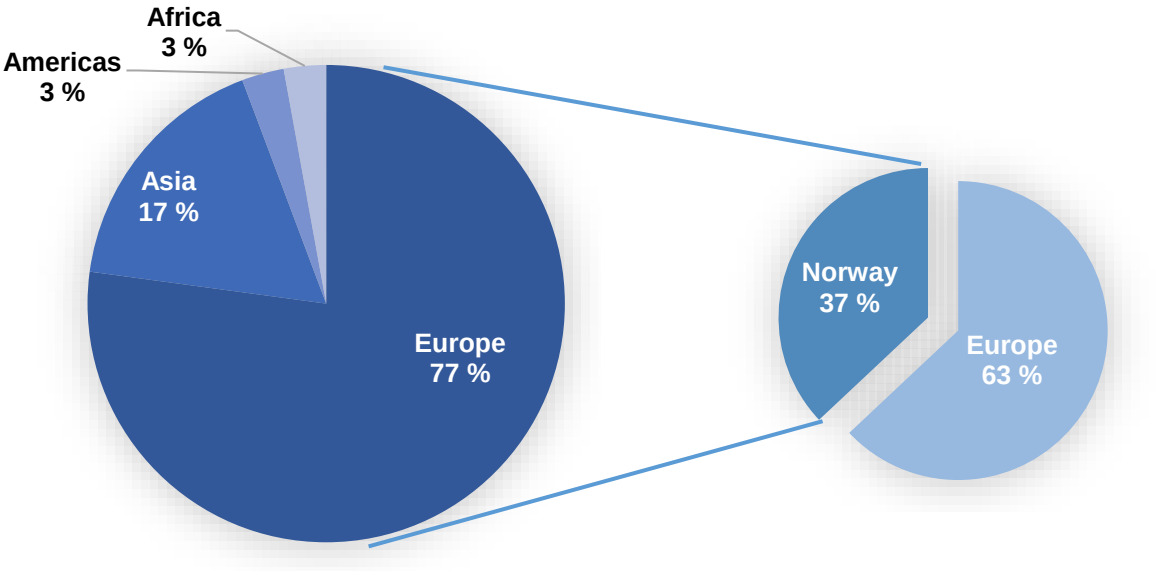

Figure 1: Geographical Representation.

All Water Magic project partners' were actively participated in EWA-WMCC 2016 conference and were members of the scientific committee.

The number of female participants at the EWA-WMCC 2016 conference was slightly lower (30%) than the IWA-PS 2016 (35%) (Figure 2).

There were 5 keynote presentations, 14 full oral presentations, 8 short communications and 8 poster presentations (Figure 3).

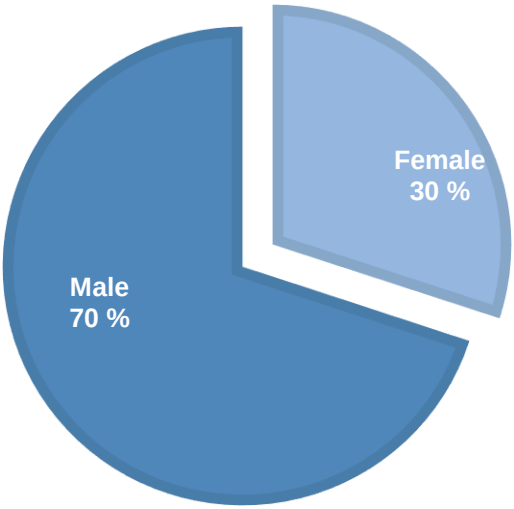

Figure 2: Gender representation.

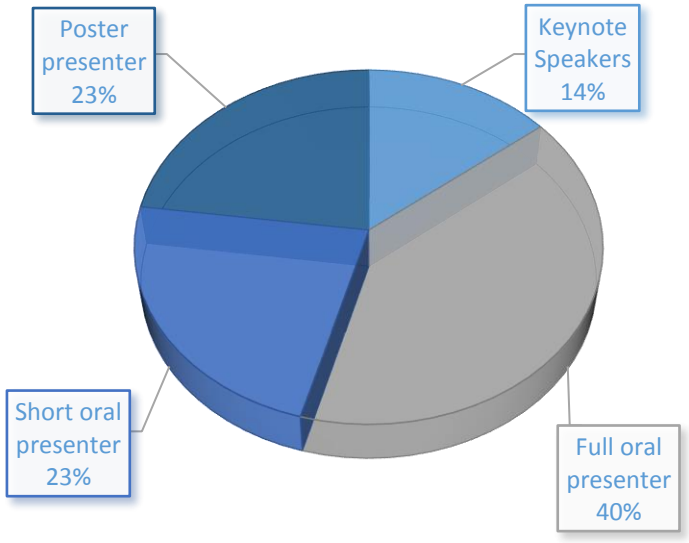

Figure 3: Role in the Conference.

4. Description of EWA-WMCC 2016 conference process

The EWA-WMCC 2016 conference was held on June 25-27, 2016 at the University Centre in Svalbard (UNIS), Spitsbergen. The Chair for this conference was Professor Harsha Ratnaweera, the Norwegian University of life sciences.

The conference was opened on June 25th at 10:00 by Professor Harsha Ratnaweera, followed by welcome addresses by (i) Johannes Lohaus, General Secretary of European Water Association; and (ii) Lars Hem, representative of the Norwegian Water Association.

The two-day program, plus one day field trip, gave the participants opportunities to discuss ways of advancing research and collaborations in the field of WMCC. The conference was designed to cover five specific topic areas with five identified Keynote speakers invited to address key issues in each topic area. The topic areas covered were: (1) water resources management; (2) water and wastewater transport systems; (3) drinking water treatment; (4) centralized wastewater treatment; and (5) decentralized wastewater treatment. Poster sessions, breakout discussions, and evening specials were also included. Each session began with an invited keynote presentation.

The five Keynote speakers presented challenges and overviews of strategies and solutions that are being developed or have been applied to address WMCC. Keynote presentations represented a range of geographical regions and described the water and wastewater management challenges that exist in their country during cold season, along with solutions that have been implemented and issues that still need further attention.
Each session had one PhD student from NMBU designated as note taker to keep track of discussions, questions, and answers from the participants.
Participants had many opportunities for interacting and sharing ideas at formal (QA after each talk) and informal (coffee breaks, lunch and dinners) settings.
The exhibit and poster area was in the same area as the refreshments which was designed to facilitate interaction among participants in an informal setting.

The second day field trip included a visit to Barentsburg, which is the Russian capital in Svalbard. It was a unique opportunity to participants to travel through Billefjorden, to observe the distinct arctic wildlife, in a surely magnificent landscape, containing an incredible industrial heritage. On the return part of the trip we came up-close with the Nordenskioldbreen glacier, which presented the chance to view the enormous blue walls rising up from the sea.
On the way back, we were able to plan a visit to explore the drinking water treatment plant and the water distribution systems to learn about water management in Longyearbyen.
Also included in the conference was a 2 hour visit to the award winning Svalbard museum to all participants and accompanying persons.

Annex 1 contains the conference program with the session titles, presentation titles, speakers, keynote speaker and the chair persons of the session.

5. Outcomes, Achievements and Impact of the conference

The proceedings of this conference were made available to participants on flash drives and printed copies. The Final Abstract Book is posted on the conference website http://www.ccnorway.no/iwasvalbard/wp-content/uploads/sites/27/2016/07/WMCC2016_Book-of-Abstracts.pdf

A dedicated website (www.ewa-wmcc2016.org) was created where the conference program, abstract book and other information are easily accessible. Following the conference, all updates are posted on the conference website.

A total of 11 papers have been retained and are being edited to be submitted to IWA publishing office for publication in IWA peer reviewed journals.

The outstanding attendance representing 18 countries, the high quality of the papers and posters far exceeded the hopes and desires of the organizing and scientific Committees.

The conference, because of its relatively small size, provided an excellent opportunity for information exchange for all participants. There was great interaction and discussion, throughout the two days among all participants, which was important in order to spawn new ideas and research strategies.

Students were directly engaged in the conference and given the opportunity to present their research to internationally recognized scientists. We included a short oral presentation and poster session to promote interaction among students, invited speakers and conference participants. Overall, the conference was deemed to be a success and to have met the identified objectives. The feedback from participants during the conference was 100% positive.

ANNEXES

1. Conference agenda
2. List of participants