



## Pressing topics in the Belgian water sector anno 2015



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### ABSTRACT

Today's water sector is governed by some hot topics, and this is no different in Belgium. As for the International Water Association (IWA), the goal of its Belgian division (B-IWA) is to gather different stakeholders, i.e. academics, policy makers and people from industry active in the (Belgian) water sector and trigger the debate. In May 2015, a first Nocturnal was organised to accomplish just this. Seven hot water topics, proposed by participants at the time of their online registration, were addressed in rotating round table discussions. These topics included resource recovery, micropollutants, water scarcity, hydroinformatics, integrated water management and modeling, technology vs. legislation and Computational Fluid Dynamics in water applications. The lively discussions led to the idea of this short contribution describing the outcomes of these round table discussions, along with some additional research on the topics. Main conclusions include the need for education (both of scholars and young professionals), inter-domain communication and the growing importance of IT in the water sector.

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## 1. Introduction

It has become very clear lately that water in general is a hot topic worldwide. The World Economic Forum, the UN Millennium Development Goals (MDGs) and several other international entities pose water as a resource with high

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associated risks and impacts and with an increased need for technology and its transfer (World Economic Forum, 2015; Millenium Development Goals Gap Task Force, 2015). Especially in the context of sustainability, water takes up a key role. It is “a key resource (...) for which sustainability assessment is needed to preserve (...) the resource for present and future generations” as stated on the European level (Sana et al., 2012). On an international level, the United Nations' Sustainable Development Goals (SDGs), the successor of the MDGs, provide the clearest message (United Nations, 2015). In contrast with the MDGs, a lot of SDG targets apply for the Western world as well, e.g. the target of increased recycling and reuse. Stuchtey (2015) is optimistic and states that water is not only a huge challenge but also an opportunity, e.g. within the circular economy paradigm.

Whether a risk or an opportunity, it is clear that water is closely linked with society and sustainability. The Belgian division of the International Water Association (B-IWA) recognizes this link. During its first ever Nocturnal, round table discussion sessions were set up and Belgian water professionals with different backgrounds were asked for their opinions and insights. What follows are the conclusions and suggestions that were gathered from the discussions.

## 2. The Belgian hot water topics

The topics covered during this stakeholder event are listed in Table 1. These were suggested by event participants upon registration, which ensured a large involvement during the discussions. Table 1 also gives, in some key messages, the most important outcomes per topic, for the sake of completeness. Because elaborately reporting the outcome of every separate discussion would cause this contribution to lose focus, the authors opted to describe the three main conclusions that were a common thread throughout all discussion sessions.

### 2.1. The growing importance of information technology (IT) in the water sector

IT is everywhere these days, and this appeared to certainly be valid for the Belgian water sector as well. The central role data and IT play in the water sector today, both in expected and less expected fields, became very clear. Three items that deserve more focus could be distinguished in several of the discussion sessions. An internet search revealed that also on a European level, these items get a lot of attention.

- Data: first of all, with increasing possibilities to gather digital data, sufficient data storage capacity is needed, whether on local drives or using cloud services. Secondly, and more importantly, the technical implementation of saving data is not just a matter of putting the data onto a drive some where. The data format used, incorporation of clear metadata, interoperability between different data sets and automated data validation are essential to streamline the data chain into both a research and industrial setup. When implemented properly, this leads to increased efficiency and diminishes the risk of losing data (and money). The WISE (Water Information System for Europe) partnership, the European Environment Agency's Water Data Center and the Big Data Europe project are good examples of how Europe supports this increased need for data storage and availability (Water Information Systems for Europe, 2016; Water Data Center, 2016; Big Data Europe, 2016; Hering et al., 2010).

**Table 1**

The seven topics discussed at the first B-IWA Nocturnal, along with a short description of the topic-specific outcomes. This table is added for the sake of completeness; the major part of this contribution will go deeper into the three general conclusions.

Discussion topic	Outcome
Resource recovery	<ul style="list-style-type: none"> <li>• The order of resources to recover was agreed to be first water, then nutrients and then energy.</li> <li>• Criteria for efficient resource recovery are: Life Cycle Analysis (LCA), balanced supply and demand and safety</li> <li>• Specific actions to take for a fast resource recovery paradigm shift include environmental cost accounting and a paradigm shift in design and production</li> </ul>
Micropollutants	<ul style="list-style-type: none"> <li>• The precautionary principle is the right choice to steer legislation</li> <li>• The choice for reduction at source or end-of-pipe depends on a multitude of factors, including pollutant source and technical or practical feasibility</li> </ul>
Water scarcity	<ul style="list-style-type: none"> <li>• Belgium is a water-scarce region, but is not experienced in that way by the public</li> <li>• Legislation and information are the perfect tools to tackle the Belgian water scarcity</li> </ul>
Hydroinformatics	<ul style="list-style-type: none"> <li>• Data (availability, treatment, management) is becoming increasingly important in the water sector</li> <li>• Sharing of data and software is felt to provide a faster way forward</li> </ul>
Holistic water management and modeling	<ul style="list-style-type: none"> <li>• Flexible software, a sound uncertainty propagation and coordinated effort are key in tackling holistic issues that have different time and space scales</li> </ul>
Computational fluid dynamics (CFD) in water applications	<ul style="list-style-type: none"> <li>• There is a discrepancy between the use of CFD in academia and industry</li> <li>• A knowledge gap is present between the potential of CFD and its current application</li> </ul>
Technology vs. legislation	<ul style="list-style-type: none"> <li>• Four interaction scenarios between legislation, industry and research were identified. The main need is the one for correct communication</li> </ul>

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