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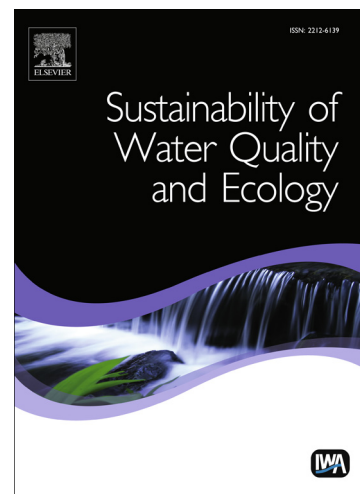Please cite this article as: R. Vannevel, Learning from the past: future water governance using historic evidence of urban pollution and sanitation, *Sustainability of Water Quality and Ecology* (2016), doi: http://dx.doi.org/10.1016/j.swaqe.2016.09.002

Learning from the past: future water governance using historic evidence of urban pollution and sanitation

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ABSTRACT

Given the complexity and urgency of future governance, the beneficial use of historic evidence for decision-making is examined. Considering the megatrends and the objective of sustainable development, environmental governance has become subject of a global policy and local (in particular urban) management. The ongoing shift from a technology-driven to a governance-driven society will define the need and kind of future technological improvements and innovations. Mainly based on the industrial and sanitary revolution, it is illustrated lessons can be drawn from facts and storylines, suitable for decision-making and technological applications. Water technology provides part of the solutions for water-related issues, in the sense techniques from the past may still offer opportunities for future applications. But historic evidence on the process of decision-making becomes of higher value in supporting future governance. The cases of London (UK) and Ghent (Belgium) show successes and failures of technological developments related to the process of decision-making. At the same time, they provide an example of deriving a storyline from facts.

KEY WORDS

Environmental governance, environmental history, industrial and sanitary revolution, Pentatope model.

1.   **Introduction**

With the effects of climate change becoming visible and tangible for almost any civilian worldwide, environmental governance entered a new era. Floods and droughts, damage to crop cultures and loss of biodiversity result in a decrease of economic welfare, social well-being and natural capital value. The extent they tend to affect the systemic processes of the socio-economic and natural capitals is clearly structural. In this respect, the social history of environmental policy is important, evolving from a pre-modern society with mainly individual risks to a modern and industrialised society with global risks: social class conflicts of the 19th C. are replaced at the end of the 20th C. by environmental risks that threaten all livings forms on the planet (Ester & Mandemaker, 1994). The challenges for governance in general and for environmental governance in particular are enormous, as reflected in the megatrends described in UN, OECD and EEA outlook publications (EEA, 2015; OECD, 2012; UNEP, 2012). Future governance is not only determined by its complexity, but also by the urgency to act. Moreover, now it is time for actions, it is too often supposed knowledge and technologies are readily available and suitable for implementation. In reality, there is little experience is achieving global environmental goals by means of a large array of instruments to be applied by a multitude of governments with different social and political cultures, financial means and available technologies. Within a time span of about a few decades, decisions taken at a global level must be implemented by measures at a local level. Within this temporospatial window, environmental governance is to become most challenging and critical.

Future governance is about directing policy towards sustainable development, which includes the recognition past and present developments were or are not that sustainable. Von Weizsäcker & Schmidt-Bleek (1994) call it 'the environmental crisis' and their analysis is twofold: 1) diagnosing what went wrong, and 2) defining global challenges. The direction to be followed should include answers on what must be achieved and how, and they notice that some local successes of pollution control by government and industries have shown to be of little value compared to the Earth's real threats.