



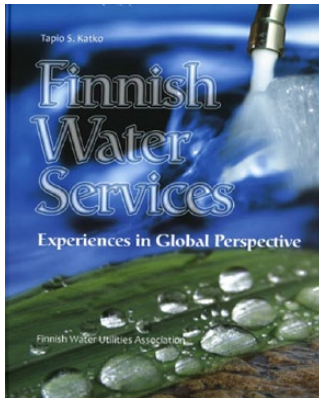
Water Is Life: Water Is Future

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Katko, T.S. *Finnish Water Services: Experiences in Global Perspective*. Finnish Water Utilities Association, 2016, 288 pp. €55. Mustasaari, Finland and ISSN is 978-952-6697-26-0

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Nature provides a huge amount of eco-services for humankind. Water is one of such key services. In fact, water stands for life since life would not exist without water. Water signifies future since there would not be any future without water for us humans.

Tapio Katko, UNESCO chairholder from Finland, and adjunct professor at Tampere University of Technology, has published an extensive book on water services titled *Finnish Water Services: Experiences in Global Perspective*. This *magnum opus* is a comprehensive handbook on issues related to water services. The author challenges us to think about water services from various perspectives. The questions he poses include the following reflections:

- Can 24/7 access to safe drinking water be taken for granted?
- What threats does deterioration of water and sewage networks pose?
- Who are responsible for providing and producing water services?
- Why do many international water-related comparisons rank Finland among the top countries?

Purpose of the Book and Its Main Themes

As it is stated in the foreword, the book was written mainly for the foreign reader with an intention to make high-end Finnish water know-how more visible in the international water arena. Apart from knowledge sharing and peer learning, the key purpose of the book is to demonstrate the importance of long-term thinking, analysis, and research for strategic planning and decision-making activities.

The content of the book is structured around the four main topics:

- Water problems, solutions, and technology development
- Operational environment and economics of water services
- Institutional development and governance
- Societal importance and futures of water services

In the first part of the book, importance of water services for the society is discussed. The author provides examples of Finnish water services practices and talks about past and future trends of international water policies. He portrays the birth of the United Nations (UN) Family and Bilateral Development Cooperation, evolution of water services

comparing Finland and Sweden, water services system efficiency and use, evolution of water treatment methods, and environmental concerns such as water pollution control.

The second part of the book is dedicated to the changing operational environment of water services at the global, European, national, and municipal levels. This chapter provides information on various water services organizations, financing, and tariffs, and discusses the shift from vulnerability to continuity management of water services. Ultimately, recommendations for the more customer- and citizen-oriented water services are provided.

The third chapter focuses on institutional development, legislation, and governance. The author touches upon such topics as required engineering education standards, water services education, and its challenges. In addition, Katko talks about Water Utilities Development Fund that supports research and development activities, as well as collaboration between different stakeholder groups. He further discusses outsourcing of some activities from the public to the private sector (e.g., the responsible public ownership model), aiming at active engagement of all the partners to improve operations, openness, and transparency of the whole system, and transforming international water arena.

In the fourth part of the book, Katko writes about societal meaning of water services and future challenges of Finnish water services by 2030. This point of view is especially important for futures research, although the year 2030 from the year of publication is already very close. Based on the results of the expert group's survey, the future challenges were grouped into three different clusters: vulnerability and risk management related to the aging of infrastructure, human resources, and know-how. The author ponders the impact of these clusters on international cooperation and politics, the wider applicability and replicability of the Finnish example on a global scale.

Water is a global challenge that has different local and regional solutions. In Africa, there is lack of water and serious draught, whereas in Finland and Nordic countries, we drink ample and fresh water from tap and take

it for granted. From the perspective of futures studies, water is a complex topic, which is clearly reflected in the next section dealing with the UN 2030 Agenda for Sustainable Development and the Millennium Project's 15 Global Challenges Review Framework.

Sustainable Development Water-Related Goals

The main subject of the book is closely connected to the sustainable development goals (SDGs). Concerns related to water, such as its pollution and excessive use, have been widely discussed by the UN in the 2030 Agenda for Sustainable Development (United Nations, 2015). The updated list (Figure 1) includes seventeen goals that aim at tackling poverty, and fighting inequalities and climate change globally. For instance, goal 6 pursues the idea to ensure access to clean water and sanitation for everyone. Goal 14 encourages draughts to conserve and sustainably use the oceans, seas, and marine resources. The clean water supply also has links to goal 2 (hunger eradication), 3 (promotion of health and well-being), 9 (industry, innovation, and infrastructure), and 11 (sustainable development of cities and towns). Overall, the SDGs reflect the urgent global problems the humankind is currently facing with, that is, water scarcity, and poor quality and inadequate sanitation that in its turn significantly affects life standards in some parts of the world.

Water in the Global Challenges Framework of the Millennium Project

In addition, the issue of clean water availability and distribution has been raised by the Millennium Project. The Millennium Project is a global think tank that uses the framework of fifteen global challenges as one of its research instruments. Clean water is the second Millennium Project global challenge the humanity needs to address globally (Figure 2). The complex nature of water and its critical future is also reflected in the fact that it is linked



Figure 1. Sustainable Development Goals.

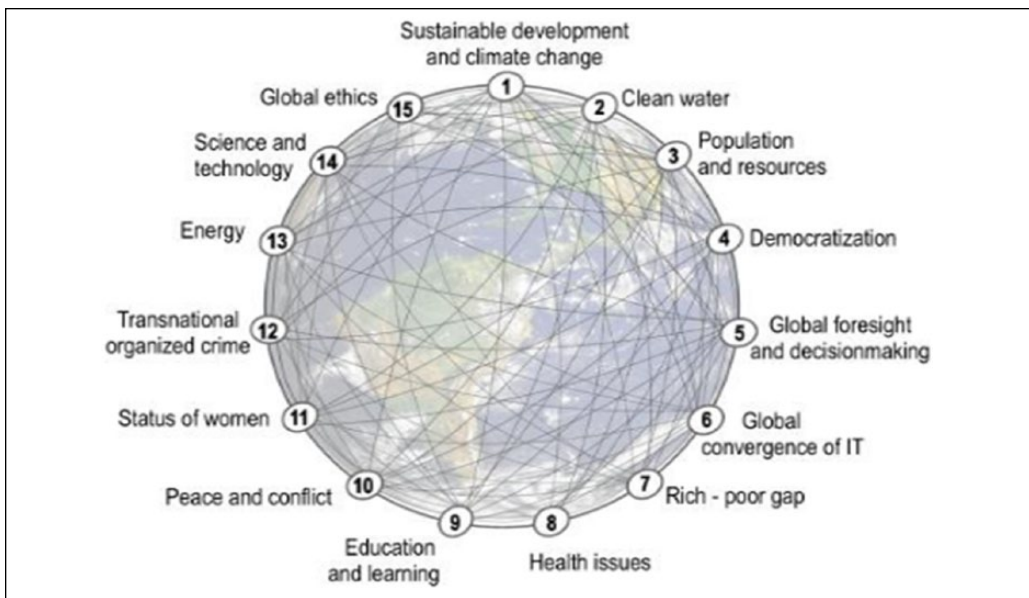


Figure 2. Global challenges for humanity according to Millennium Project framework.

to almost all the other fourteen global challenges in the Millennium Project framework (Glenn et al. 2017; <http://millennium-project.org/millennium/challenges.html>). As water resources are shortening and are increasingly threatened, much broader collaborative, integrative, and innovative water management approaches to handle future conflicts over water among and within nations are needed.

Water is increasingly becoming an object of research and reflection together with energy

and food (energy, water, food Nexus). This approach was strongly highlighted in spring 2017 at the watershed conference “Replenishing Water Values for a Thirsty World” in Vatican (www.clubofrome.org/watershed-conference-2017-videos-and-photos-of-the-event/), hosted by Vatican’s Pontifical Council for Culture in cooperation with the Argentinean chapter of the Club of Rome. Professor Heinonen as a representative of Tekes-funded Neo-Carbon Energy project (<https://www.utu.fi/en/units/>

ffrc/research/projects/energy/Pages/neo-fore.aspx) aiming at sustainable futures was invited to participate in this conference where she had a chance to disseminate information on this book by Katko.

Futures Studies Perspective

What is intriguing is that Katko highlights the vast topic of water services from futures studies' perspective. He talks about changing environment and identifies challenges and external pressures that may affect the desired future of water services in Finland and globally. The ideas of how significant long-term thinking is and consideration of futuristic views in water services have been stretched throughout the whole book. Katko emphasizes that futures thinking has already been advanced in different areas and sectors in Finland including the Committee for the Future in the national parliament. Based on that, he suggests to extend systematic futures thinking toward water services as well. He elaborates a framework that explains the algorithms of events and systems development, which he calls "path dependencies." Path dependencies have straightforward or deterministic nature meaning that history tends to repeat itself and that modern systems and ways of order may resemble previously existed ones. According to the author, this determinism and causality are related to the concept of institutional memory (a set of beliefs that is shared among the members of a social group and should be transmitted to the next generations). The concept of institutional memory has attracted a lot of attention in futures research.

By introducing this framework, Katko encourages to integrate futures thinking and retrospective perspectives. He notes that the same historical mistakes are repeated when the pasts are not known. Desired future development paths can be actively pursued if we know where we are and where we are from (Katko 2017, p. 48). Therefore, he proposes to take a long time frame on water services from one hundred years in the past to one hundred years ahead. As it is stated in the book, "in Hämeenlinna a general plan on sewerage was already made in 1910 with the idea

that wastewaters will be treated in the futures—which started in 1966" (Katko 2016, p. 253).

Besides, Katko (2016, pp. 41–42) reminds (referring to Sedlak) that the modern water infrastructure still adheres to the original blueprint for ancient Rome. History of water services is as old as human settlements. The accelerated development of European urban culture literally started with Cloaca Maxima, the first water system in Rome around 600 BC.

Katko also discusses other examples of previously conducted futures thinking applied toward water services in the Finnish context. After referring to water resources strategies and guidelines published by the Ministry of Agriculture and Forestry, the Finnish Water Utilities Association and the Association of Finnish Water Cooperatives, Katko concludes that many issues covered in these documents, such as rehabilitation, vulnerability, risk management, vocational education of the workforce and continuing education, research, and cooperation among the stakeholders, have also been taken into consideration in his research. The author suggests three important research themes regarding futures, that is, a systematic forecasting survey on water services in the futures, water pricing and related decision making, and values of water services and the problem of the invisible city together with holistic asset management of water services.

Apart from the textual content, the book has a clear and solid illustrative base full of graphs, statistics, and photographs. The abundance of citations and aphorisms improves its readability and extends its cultural touch. A multidimensional analysis made by Katko is perfect for both professionals and all those interested in water and for the future of humankind. To conclude this book review, a statement of Albert Szent-Györgyi¹ (Katko 2017, p. 61) was chosen:

Water is life's matter and matrix, mother and medium. There is no life without water.

[Note: The printed book can be ordered from FIWA's webshop: www.vvy.fi/shop Price 55 € (VAT. included, postage will be added). The

co-published eBook by IWA Publishing 2017: <https://www.iwapublishing.com/books/finnish-water-services-experiences-global-perspective>

Note

1. Albert Szent-Györgyi was a Hungarian physiologist born in 1893. He was awarded the Nobel Prize in Medicine 1937, from which he donated money to volunteers from Hungary traveling to Finland during the Winter War in 1939.

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