



BOOK REVIEW

Resilient Water Services and Systems: The Foundation of Well-Being

by Petri Juuti, Harri Mattila, Riikka Rajala, Klaas Schwartz, Chad Staddon, (Eds.), 2019
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The concept of resilience has been in focus of the international community for about 25 years, although the obvious need for it has been indirectly addressed by societies since the birth of larger cities, maybe starting with Rome 2400 years ago. When man was forced to sustain all needs based on subsistence, resilience equalled survival. But with the growth of more complex resource sharing in a money-based economy, the dependence on others to survive and even thrive became obvious. Since water is essential for life, a functional and resilient water service in society is central for the function of it. When writing this review, the world experiences a pandemic challenge from the SARS Covid – 19 viruses. The first recommendation from WHO to reduce infection risk is to wash your hands with soap and water regularly. This presupposes access to safe and clean water. The water service is as always essential for life.

In the book *Resilient Water Services and Systems: The Foundation of Well-Being*, edited by Petri Juuti, Harri Mattila, Riikka Rajala, Klaas Schwartz and Chad Staddon, researchers and scholars from several universities and countries have contributed with 15 chapters on what constitutes a resilient water services and system (WSS), how the water sector in urban areas has developed the last 150 years and what measures are needed in terms of policy development, organisation and technology to guarantee the sustainability of the WSS in the future. The book consists of an introduction, 13 case studies from Africa, Asia, Europe and North and South America presenting perspectives of resilience from around the world, and a concluding chapter of what the book highlights as essential for WSS to offer resilience in practice. The chapters can be read independently, but to gain full understanding of how resilience in the WSS can be interpreted and achieved, I would recommend the reader to enjoy all chapters as in-depth reading.

The etymology of resilience is from Latin re- (back) and salire (jump). The physical meaning of the word as an action or an act of rebounding or springing back; rebound, recoil, seems to have been in use at least since the seventeenth century. The Oxford English Dictionary lists another three meanings of resilient, where the last is the robustness or adaptability for a person or an organization to recover quickly or easily from, or resist being affected by, a misfortune, shock, illness, or similar events. The word in this meaning has been used in written form in English since at least 1857. This latter meaning is the most common meaning when discussing resilience in the WSS.

When reading the 13 case studies, it becomes clear how different countries and traditions have emphasised different aspects of resilience work. Examples from Finland, the Netherlands and Sweden illustrate a close link between WSS resilience and civil defence contingency and emergency planning. Another, more actor-centred approach, discusses the general need for organisations and individuals to engage in cross-boundary collaborations and by-pass traditional silo-based structures to enhance resilience in the WSS. The ability and capacity of staff and organisations are key parameters for long-term provision of safe and reliable water services. The need for policies and mandates from directors and managers to work with resilience in organisations are also emphasised.

Public institutions, such as municipalities, own 90% of the urban water utilities, 95% of the wastewater and close to 100% of stormwater systems in the world. The role of the municipality in the resilience planning and implementation must be explored and must not be omitted. Several of the chapters discuss the need to enter an age of replacement when the service lifetime of the underground water infrastructure, the pipes and pumping stations, reach their endpoints.

I think the book deserves to be summarised to a 10 pages executive summary for the ministries of the world responsible for national water planning. When all countries which can afford it now announces large and previously unseen subsidies to the contracting economy during the Covid-19 pandemic period, it is timely for the municipalities to invite governments to launch re-investment programmes for the water sector and suggest a 10-year period for measures in network refurbishments.

What is not emphasised in the book is the economic value of WSS. This is trivial, but for decision makers, the money will always matter, and an additional

chapter on the value of a sustainable WSS and the alternative costs for societies when the WSS does not function, could be relevant to add in the second edition of this book.

I recommend both scholars and practitioners to read the book and discuss its message broadly. Historic and contemporary evidence are presented in a concise and clear way supporting the fact that resilience in the WSS is central for a functioning society. It is important at present and will be increasingly relevant in the coming decades.