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BOOK REVIEW

Juuti, P.S.; Katko, T.S. and Vuorinen, H.S. (Eds). 2007. *Environmental history of water - Global views on community water supply and sanitation*. London, UK: IWA Publishing. ISBN 978-18-433-9110-4, 640 pages, US\$218.

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INTRODUCTION

The increasing consensus of the international community of water and sanitation researchers is that centralised water and sanitation concepts of western societies are not the optimal solutions to today's challenges (Lens et al., 2001). Rather, they hamper the application of diverse and more viable technologies and policies; both in the developed and in the developing countries (Spaargaren et al., 2006). Achieving the water and sanitation aims of the Millennium Development Goals (UNGA, 2000) would require more innovative solutions, but present-day water and sanitation practice still features only a limited range of designs. *Environmental History of Water* is a book that might broaden one's view to consider more than the conventional solutions. It is a concise book offering a wide range of system designs applied throughout history. The publication is a historical overview on how people tried to ensure their water supply and how the necessity of proper sanitation technologies appeared in different places and times. It is also a book, which portrays a long series of successes and failures in designing systems to comply with the changing conditions in water supply and sanitation designs.

STRUCTURE AND CONTENTS

Available from IWA Publishing (ISBN: 1-84339-110-4), the work was published in 2007. It is structured into four main parts containing 39 chapters. The four parts are arranged as (i) early systems and innovations, (ii) period of slow development, (iii) modern urban infrastructure, and (iv) future challenges in water supply and sanitation services and environmental health. The first part contains the history of early water systems and is mainly the product of the three editors. The other three parts exhibit a more fragmented historical line and contain a range of peer - reviewed case studies from the 18th - 19th century (part II), the 20th century (part III) and from present times (part IV). These parts are mainly written by invited authors with eventual co-writing from the editors. The three editors also provide an introduction and a concluding section to each part.

The common denominator of the contributions is the thematic approach initiated by the editors, followed by the contributing authors in the case-study chapters. This thematic approach considers key issues as population growth, health, water use, technological choice and governance, and looks at their interactions on a temporal scale of past, present and future. The contributions show a wide range of topics with water supply issues and/or sanitation solutions. The topics range from environmental health stories to the importance of water in military operations, from privatisation of water servicing to the

solving of unique water-scarcity situations. The total scope of the case studies covers all continents, and the locations include cities and rural areas alike.

EVALUATION

Environmental History of Water is a brave approach of the three editors to sketch a historical overview of water and sanitation matters of mankind. In their quest they are assisted by some 30 experts from all over the world. The volume exhibits a regular chronological span and within a particular era moves freely around the globe to depict different case studies. The diversity of the chapters feels natural with the colourful historical settings and the changing dynamics of the relations between humans and water. Despite the large amount of experts, and probably thanks to the editors, the quality and writing style of the chapters feel rather standardised.

The first part of the book is a remarkable collection of human knowledge on water engineering before the middle ages. The development of wells and toilets is followed through antiquity up to the Middle Ages and the chronological order of different well and toilet designs are categorised here. Significance of the first innovations, like that of the pit latrine (still a frequently used basic method) is described in detail. The chapters show that where people did not have modern knowledge or technology to apply, they did manage to solve problems with simple but powerful designs. Some of the inventions of the era are still in use today (draw well, pit latrine) and remaining monuments as Joseph's (Saladin) well in Cairo (Egypt) or the Roman aqueducts testify to the impressive engineering capacity at the time.

If a truly significant chapter has to be chosen from the second part of the book, then it has to be the one on the emergence of the idea of waterborne diseases. This notion resulted in the introduction of the piped water supply and the water flush toilet in Europe. The reappearing chapters on environmental health are another asset to the book and they might deserve a common section to better illustrate the development line. Still, considering the chronological division of the book, the fragmented reporting on water and health relations seems an acceptable trade-off. Another interesting - but fully justifiable - consequence of the chronological organisation is the inclusion of 19th-20th century indigenous water beliefs and solutions in the latter sections of the book. While some of the solutions resemble water-management options from the chapters on pre-Middle Ages, the message of keeping the chronological order reinforces the diversity of available options today. As the indigenous views are explained, we again receive a valuable lesson on the importance of a broad perspective when trying to solve water or sanitation problems. The age-old water management practice of Ghayl Ba Wazir in Yemen will probably stay in the memory of most readers for a long time.

There are numerous chapters on water development in western countries throughout the book. Providing the most developed designs of their time, these chapters give a sharp contrast to those that handle topics from developing countries. The chapters on African water management and sanitation depict the constant struggle in providing adequate water supply or proper sanitation in low-asset regions. The studies on Kenya, Tanzania or South Africa also show the huge progress made in a relatively short period of time (less than 200 years). These chapters also handle the challenges arising from the growth of the urban population in developing countries combined with shrinking water-supply capacities. Finally, the African chapters shed a light on the chosen paths of consumers when institutions and infrastructures related to water supply are deteriorating.

Success or failure in water management systems is often determined by the availability of sufficient funds. The economic aspects of water supply and sanitation are less defined in the book, but are often present when discussing viability of technological designs or whole systems. The separate chapter dedicated to the history of water privatisation in Europe and the United States contains a great deal of information. The case studies on municipalities from developed countries offer insight to the viabilities and reasons of failures of centralised systems. The emergence of the centralised water supply and sewerage systems is described for many European cases. The final chapters handle the most stressing

global water challenge: providing adequate and sufficient water management for the growing population of the urban poor in developing countries. Finally, the epilogue of the book summarises the most important lessons that can be distilled from the presented history.

The coverage of topics and situations, even in view of a historical summary, is remarkably large. The large number of chapters is distributed well in the time range, and there is an impressive global balance amongst the case studies. Still, such a historical overview may never be complete. While a high coverage is achieved both geologically and historically, the editors are encouraged to further extend the next edition with water history episodes of China, Germany or India. There is only one aspect of the book that truly requires improvement and that is its printing features. The quality of photos is often below the general quality of the contents. The publishers could have improved the appearing textual errors as well. Having said that, it must be stressed that this small discomfort will not considerably influence the total value of the book.

CONCLUDING REMARKS

Although *Environmental History of Water* can be read as a fascinating historical overview, its relevance to the water problems of today makes it much more than a history book. The provided 'set of solutions' combined with the good sketches of local conditions makes it an excellent collection of studies on water and sanitation systems. So while this book can be suggested to those interested in the history of water, it is certainly recommended to the scientific and practical experts who want to understand the background of today's water and sanitation problems. If this wealth of information from the past could help in improving environmental viability of new designs, then we can meet arising challenges with more confidence in the future.

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