

Biswas, A.K., and Tortajada, C. (2019). Foreword. In Girardin, B., and Fiechter-Widemann E. *Blue Ethics. Ethical Perspectives on Sustainable, Fair Water Resources Use and Management* (pp. 9-13). Globethics.net.

FOREWORD

Blue Ethics is a very different type of book compared to others available on water. First its coverage, in terms of subjects considered, is very diversified. These range from the importance of women's voice where water stress is a threat to important other topics like plastic contamination in the food chain, impacts of microplastics on aquatic organisms, water as a human right, developing financial models to promote access to drinking water and sanitation, water conflicts, legal and economic perspectives, right to food and water, management of transboundary aquifers, social costs for building dams and a series of articles on ethical perspectives, including global water ethic and justice. Together, they will give the readers an excellent perspective on the complexities and diversities of the water issues and challenges facing the world.

A second impressive aspect of this book is its extensive geographical coverage. In the final analysis all water problems are "local", and their solutions also have to be "local". Both problems and solutions must very specifically consider local physical, climatic, economic, social, cultural, political and institutional conditions. For developing countries, which is the main focus of this book, what could be a solution in one country may not be appropriate for another country. Also, for medium to large countries like Brazil, China, India, Malaysia or Indonesia, what may work in one part of the country may not work in another part of the same country. A strength of this book is that it considers water issues of

10 Blue Ethics: Ethical Perspectives

specific countries of Africa, Asia and Latin America, and then considers how, or even, if experiences from developed countries of Europe and Singapore may be relevant with appropriate modifications to meet local conditions.

The third strength of this book is that each article is brief. One can thus quickly get a general view of the very different water problems from many parts of the world. If one wants to learn more, one can refer to the sources mentioned in individual articles.

The fourth and most impressive part of the book is its coverage of ethical perspectives of water availability, use and management, including global justice and ethics, such as rights to water and food. These issues are very seldom discussed in most water-related books.

The book has six major chapters, and each chapter contains 2 to 7 articles. The largest chapter is on ethical perspectives, with 7 articles. These are in addition to articles on legal and economic perspectives on global water justice and human rights to water in other chapters.

Singapore's success in providing clean and drinkable urban water management and also its very successful wastewater and stormwater management have been discussed in two chapters, rightly in our view. In 1965, when Singapore became independent, its urban water and wastewater management was at a similar level to that of other Asian cities like Delhi or Dhaka. Yet, in about a period of two decades, with enlightened policy approaches, Singapore became the poster child of good, efficient and equitable urban water and wastewater management in the world. This is in spite of the fact that under the standard classifications used by the United Nations agencies, World Bank, Asian Development Bank, World Resource Institute (WRI) and general water profession, Singapore "should" be suffering from acute water scarcity. In fact, when ADB, UN System and WRI identified it as a "seriously water scarce country" under their normal classification that countries with less than 500 m³/person/year of renewable water supply are water

scarce, the Singapore Government reacted very strongly. It challenged these institutions to ask any or all Singaporeans if any of them have felt any water stress in recent decades. If they had done so, Singaporeans would have strongly rejected this assumption and conclusion that Singapore is suffering from acute water scarcity.

The fact is water is a renewable resource. It is not like oil, natural gas or coal, which once used breaks down into various components and cannot be used again. Water, in contrast, is a renewable resource. It can be used, wastewater generated can be properly treated, and treated wastewater can be reused. With good management, this cycle can continue indefinitely. Singapore has less than 130 m³ of renewable water/person/year. With long-term planning and good management, this city-state does not fear any water stress now, nor does it anticipate any problem by 2061, when it expects water demand to double. Also, in 2061, its water treaty with Malaysia, will expire. Currently Malaysia provides more than 50% of its water requirements. With continuous reductions in per capita domestic water use, industries become more and more water efficient, collection of more and more rainwater, reuse of properly treated wastewater and seawater desalination, Singapore is not experiencing any water stress now. Nor does it expect any water scarcity during the next 50 years. This does not consider advances expected in science, technology and management practices in the coming decades. These are likely to be very significant.

How has Singapore managed to achieve so much with so little water available? It started with strong and sustained support from the highest level of policymakers. Its first Prime Minister Lee Kuan Yew, realized that, if the new country has to survive and thrive, it must achieve water security on a long-term basis. He told us that “every policy must bend at the knees for water”. He had three experts in his office to determine the impacts of all policies on water. If the impacts were neutral to positive, the policies were allowed to proceed. For nearly three decades when he

12 *Blue Ethics: Ethical Perspectives*

was the most influential political leader of Singapore, water received priority political consideration.

In contrast, in the rest of the world, top political leaders are not interested in water on a sustained basis. They are interested in water only when there are serious floods or droughts. Once these extreme hydrological events are over, their interest in water evaporates!

World's water problems can be solved but only with long-term sustained political commitments. They cannot be solved with short-term and *ad-hoc* measures.

Under Lee Kuan Yew, Singapore decided that it should have clean water for everyone, both rich and poor. Supply should be equitable, affordable and efficient. Thus, Singapore, unlike South Africa, India and many other developing and also developed countries, has no free or subsidized water. Everyone must pay water tariffs which is set at its marginal cost. PUB, Singapore's National Water Agency, must recover full cost of providing water and wastewater services, including all investment, operating and maintenance costs.

For those families considered poor, they receive vouchers. The amounts depend on their economic situations and number of family members. These vouchers are used to pay for parts of their water and electricity bills. These vouchers are issued by another Ministry. This means PUB recovers full water bills from all its households, rich or poor. PUB's task, as Lee Kuan Yew explained to us, is to run an efficient water supply and wastewater system that is financially viable on a long-term basis. Equally, it is the task of the Government to ensure the poor have access to water and electricity at prices they can afford.

PUB also has a strong research and development wing, paid for by its customers. It is constantly improving its management practices, and considering applications and adoptions of new technologies. As a result, its marginal cost of providing water has steadily declined in real terms. Because of this reduction, Singapore's water tariff did remain the same

between 2000 and 2016. It was increased by 15% each year in 2017 and 2018. Even after these tariff increases, households, as percentages of their incomes, are generally paying less in 2019 compared to what they paid for water in 2000. If water bills are indexed to inflation, current bills are less than what they were, in 2000 for the same amount of water consumed.

Singapore's water journey, and its continued success, indicated that countries and cities can solve their water and wastewater management problems, but not with conventional practices. Free or subsidized water invariably leads to wasted water. With increasing population, urbanization and industrialization, developing countries need to provide clean water, on a 24x7 basis, that can be drunk straight from the tap without any health concerns. This, however, cannot be achieved with the current practice of providing subsidized or free water. As the book rightly notes, human right to water or food does not mean people should have free access to water or food. Households must pay for water and wastewater services that are efficient and affordable. Equally, it should be ensured that poor have adequate access to these important services. Policies have to be reformulated to ensure water utilities are financially viable and provide good services at affordable prices. Singapore's experience shows that given sustained political interest and courage, good and enlightened policies, domestic and industrial water problems of both developing and developed countries can be solved on a long-terms basis.

Asit K. Biswas

*Distinguished Visiting Professor
University of Glasgow, UK, and
Chairman, Water Management
International
Singapore Pte Ltd*

Cecilia Tortajada

*Senior Research Fellow
Institute of Water Policy
Lee Kuan Yew School of Public
Policy
National University of Singapore
Singapore*