

Foreword

The Aral Sea has long been a poster child of pollution and environment degradation. Pictures of camels grazing next to a big ship's rusted hull; parched land where a sea rich in fish and other resources used to be; abandoned economic hubs in dry harbors; dust and salt storms large enough to be visible from space . . . All these examples have entered the consciousness of lay citizens around the world, showing how human activities have slowly but steadily destroyed what was once a rich and productive region. As the effects of climate change are increasingly felt around the world, scientists, administrators and politicians need to heed the lessons from the Aral Sea and avoid similar, looming disasters in other regions.

This urgency has been noted in many publications, scientific and otherwise, including the authoritative and regular reports by the *Intergovernmental Panel on Climate Change* (IPCC, <http://www.ipcc.ch>). Already in 1997, the IPCC highlighted the importance of the Aral Sea as “a case study of the multiplicative effects of resource overuse, which can lead to local environmental and even climate change”, noting however there had been no integrated assessment of its natural and human impacts. This clear gap is addressed by the present book, entitled “Destruction of the Aral Sea” and edited by experts of the Aral Sea who have spent decades of their professional lives measuring and understanding the evolution of the Aral Sea. In the true spirit of the Springer Earth System Sciences series, this book brings together a wealth of experts from seven different countries, spanning all fields from remote sensing to fisheries, geology, zoology, biodiversity and environmental management *inter alia*. Throughout 18 chapters, in close to 500 pages and with an extensive bibliography, sometimes summarizing innovative and important research not previously seen in the western literature, the authors show us how the Aral Sea has evolved, from long before human intervention to the latest years. This book is far from only a series of observations of “the Destruction”, and its subtitle clearly shows the potential for a “Partial Rehabilitation of a Great Lake”.

Masterfully organized and led by its editors, Philip Micklin, Nikolay V. Aladin and Igor Plotnikov, this book consists of an introductory chapter and three parts. Part I (Background to the Aral Problem) in three chapters provides essential information about the Aral Sea prior to its modern desiccation that gives context

to what has happened to the lake in the modern era. Part II (Modern Recession of Aral) in nine chapters covers key aspects and consequences of the shrinking Aral Sea from the inception of this phenomenon in the early 1960s until today. The first four chapters of Part III (Aral Future) examine what may happen to this once grand lake and its environs in coming years, depending primarily on the human response to this disaster and showing that there is a way forward, provided clear commitments and actions on the ground are taken soon. The final summary chapter includes a discussion of the lessons to be gleaned from the Aral experience along with a suggested list of key research topics that need deeper investigation in order for optimal improvement of this water body. What has happened in this region, and what is happening now, concerns us all, as global citizens in a world increasingly affected by climate change and human impacts.

Having read the many chapters of this book as it was in the making, I have seen how they evolved to form a structured summary of such an internationally important region. I can therefore only recommend its readings to scientists, administrators and decision-makers around the world, to see how the lessons we are learning the hard way in the Aral Sea now, can be used everywhere in the future.

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The Aral Sea

The Devastation and Partial Rehabilitation of a Great
Lake

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