Sustainability of Engineered Rivers in Arid Lands

This interdisciplinary volume examines how ten arid or semi-arid river basins with thriving irrigated agriculture are doing now and how they may change between now and mid-century. The rivers studied are the Colorado, Euphrates-Tigris, Jucar, Limarí, Murray-Darling, Nile, Rio Grande, São Francisco, and Yellow. Engineered dams and distribution networks have brought large benefits to farmers and cities, but now these water systems face multiple challenges, above all climate change, reservoir siltation, and decreased water flows. Unchecked, they will result in reduced food production and endanger the economic livelihood of basin populations. The authors suggest how to respond to these challenges without loss of food production, drinking water, or environmental health. The analysis of the political, hydrological, and environmental conditions within each basin gives policymakers, engineers, and researchers interested in the water/sustainability nexus a better understanding of engineered rivers in arid lands.

Jurgen Schmandt is Professor Emeritus of Public Affairs at the University of Texas at Austin and Distinguished Fellow at the Houston Advanced Research Center, where he developed their sustainability program. He specializes in water policy and sustainable development. He previously worked at the German Academic Exchange Service, Organisation for Economic Co-operation and Development (OECD), and Harvard University. He used his work on water and drought in the Rio Grande basin and northeast Brazil to start the Sustainability of Engineered Rivers in Arid Lands (SERIDAS) project in 2013. He has published books and articles on technology and society, environmental regulation, climate change, water policy, and sustainable development.

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Sustainability of Engineered Rivers in Arid Lands

Challenge and Response

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We dedicate this volume to our mentors, who prepared us for the task of convening the international research team on the Sustainability of Engineered Rivers in Arid Lands, SERIDAS.

Jurgen Schmandt
Alexander King, British and international civil servant. Co-founder and president of the Club of Rome

and

George P. Mitchell, American businessman who built bridges between entrepreneurship and sustainable development

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