

PREFACE

Riverbank filtration has been used for more than a century for providing drinking water to riparian communities in Europe, particularly in Germany. In the United States, it has been used to provide municipal and industrial water for more than half a century. Despite these successes and its appeal as a low-cost technology, it has not been widely used as a viable means for water supply in developing regions of the world. Limited numbers of systems are in operation for potable water supply and some new systems are being built to pre-treat surface water that has been severely impacted by wastewater discharge. However, use and success of riverbank filtration in desert environments is rare to find in literature. Many of the communities located on perennial rivers in desert countries (e.g., Nile, Niger, etc.) directly abstract the water from rivers, treat, and supply. Riverbank filtration can provide the added benefit of natural filtration and enhance treatment efficiency even if treatment plants are used in polluted reaches of these rivers. Also, potential applications of riverbank filtration along with aquifer storage and recovery can be envisaged for ephemeral rivers or Wadis. In this book, we examine some of the systems in the western countries and a few systems that are beginning to operate on the River Nile. We address the issue with pathogens and climate change. Also, we take a holistic approach to present that for water security in desert environments (both from pollution and source), riverbank filtration alone or in combination with aquifer storage and recovery have significant relevance.

Riverbank Filtration for Water Security in Desert
Countries

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2011, XVI, 304 p., Hardcover

ISBN: 978-94-007-0025-3