Contents

Part I  Subsurface Environmental Problems and Urban Development in Asia

1 What are the Subsurface Environmental Problems?: Groundwater and Subsurface Environmental Assessments Under the Pressures of Climate Variability and Human Activities in Asia ............................ 3
   Makoto Taniguchi

2 Asian Urbanization and Its Environments ............................................. 19
   Gayl D. Ness

3 Urban Development and Water Environment
   Changes in Asian Megacities................................................................. 35
   Akihisa Yoshikoshi

4 Comparative Analysis on Land Use Distributions and Their Changes in Asian Mega Cities .............................. 61
   Akio Yamashita

Part II  Groundwater Degradation and Resources Management

5 Monitoring Groundwater Variations Using Precise Gravimetry on Land and from Space ................................. 85
   Yoichi Fukuda

6 The Proposed Groundwater Management for the Greater Jakarta Area, Indonesia ........................................... 113
   Robert M. Delinom

7 Review of Groundwater Management and Land Subsidence in Bangkok, Thailand ........................................... 127
   Oranuj Lorphensri, Anirut Ladawadee, and Surapol Dhammasarn
Part III  Groundwater Contamination and Loads to the Ocean

8 Detecting Groundwater Inputs into Bangkok Canals Via Radon and Thoron Measurements ................................................... 145
Supitcha Chanyotha, Makoto Taniguchi, and William C. Burnett

9 Subsurface Pollution in Asian Megacities........................................... 159
Shin-ichi Onodera

Part IV  Subsurface Thermal Anomalies Due to Global Warming and Urbanization

10 Comparisons Between Air and Subsurface Temperatures in Taiwan for the Past Century: A Global Warming Perspective ....... 187

11 Evolution of the Subsurface Thermal Environment in Urban Areas: Studies in Large Cities in East Asia ............................. 201
Makoto Yamano

12 Urban Warming and Urban Heat Islands in Taipei, Taiwan .......... 231
Yingjiu Bai, Jehn-Yih Juang, and Akihiko Kondoh

Part V  Integrated Assessment of Subsurface Environments in Asia

13 Long-Term Urbanization and Land Subsidence in Asian Megacities: An Indicators System Approach ............................... 249
Shinji Kaneko and Tomoyo Toyota

14 Sinking Cities and Governmental Action: Institutional Responses to Land Subsidence in Osaka and Bangkok ................. 271
Takahiro Endo

15 Chemical and Physical Evidences in the Groundwater Aquifer Caused by Over-Pumping of Groundwater and Their Countermeasures in the Major Asian Coastal Cities ....... 289
Jun Shimada

Index................................................................................................................. 311
Groundwater and Subsurface Environments
Human Impacts in Asian Coastal Cities
Taniguchi, M. (Ed.)
2011, XIII, 312 p., Hardcover
ISBN: 978-4-431-53903-2