

ROUTLEDGE SPECIAL ISSUES ON WATER POLICY AND GOVERNANCE

Transboundary Water Cooperation

Principles, Practice and Prospects for
China and Its Neighbours

Edited by
Patricia Wouters, Huiping Chen
and James E. Nickum





IWRA

 **Routledge**
Taylor & Francis Group
www.routledge.com

an **informa** business

ISBN 978-1-138-28883-6



9 781138 288836

Transboundary Water Cooperation

Edited by Patricia Mouters, Huiping Chen and James E. Nickum



Transboundary Water Cooperation

Principles, Practice and Prospects for China
and Its Neighbours

Edited by

**Patricia Wouters, Huiping Chen
and James E. Nickum**

 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK



First published 2018
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN, UK

and by Routledge
711 Third Avenue, New York, NY 10017, USA

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2018 International Water Resources Association

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN 13: 978-1-138-28883-6

Typeset in TimesNewRomanPS
by diacriTech, Chennai

Publisher's Note

The publisher accepts responsibility for any inconsistencies that may have arisen during the conversion of this book from journal articles to book chapters, namely the possible inclusion of journal terminology.

Disclaimer

Every effort has been made to contact copyright holders for their permission to reprint material in this book. The publishers would be grateful to hear from any copyright holder who is not here acknowledged and will undertake to rectify any errors or omissions in future editions of this book.

Transboundary Water Cooperation

China and its neighbours face a series of water security issues, in which international law plays a vital role. Paramount to both policymakers and researchers in the field of water law, the current status of transboundary water cooperation schemes and how these operate in China is of global significance.

Grounded in international experience, this comprehensive volume provides readers with an up-to-date overview of current international transboundary water resource sharing policies and practices, including detailed case studies at both domestic and international levels. The authors discuss existing international laws, treaties and principles that may stimulate transboundary water cooperation and dialogue, and then analyse a number of international experiences with treaties in North America, Eastern Europe and Central Asia. They take stock of China's water resource issues, legal practices and options; examine case studies of China's southern shared rivers; and explore some innovative approaches to cooperative management of shared waters within China.

The articles in this book were originally published in the journal *Water International*.

Patricia Wouters is a Professor in the School of Law at Xiamen University, China, and Director of the China International Water Law Programme (CIWL).

Huiping Chen is a Professor in the School of Law at Xiamen University, China.

James E. Nickum is an institutional economist affiliated to the International Water Resources Association (IWRA), the Centre for Water and Development at SOAS, UK, and the University of Hong Kong.

Routledge Special Issues on Water Policy and Governance

<https://www.routledge.com/series/WATER>

Edited by

Cecilia Tortajada (IJWRD), Third World Centre for Water Management, Mexico
James Nickum (WI), International Water Resources Association, France

Most of the world's water problems, and their solutions, are directly related to policies and governance, both specific to water and in general. Two of the world's leading journals in this area, the *International Journal of Water Resources Development* and *Water International* (the official journal of the International Water Resources Association), contribute to this special issues series, aimed at disseminating new knowledge on the policy and governance of water resources to a very broad and diverse readership all over the world. The series should be of direct interest to all policymakers, professionals and lay readers concerned with obtaining the latest perspectives on addressing the world's many water issues.

Water Management and Climate Change

Dealing with Uncertainties

Edited by Cecilia Tortajada, Asit K. Biswas and Avinash Tyagi

Integrated Water Resources Management

From Concept to Implementation

Edited by Cecilia Tortajada

Water Infrastructure

Edited by Cecilia Tortajada and Asit K. Biswas

Frontiers of Land and Water Governance in Urban Regions

Edited by Thomas Hartmann and Tejo Spit

The Water-Energy-Food Nexus in the Middle East and North Africa

Edited by Martin Keulertz and Eckart Woertz

Sustainability in the Water-Energy-Food Nexus

Edited by Anik Bhaduri, Claudia Ringler, Ines Dombrowsky, Rabi Mohtar and Waltina Scheumann

Transboundary Water Cooperation

Principles, Practice and Prospects for China and its Neighbours

Edited by Patricia Wouters, Huiping Chen and James E. Nickum

Water Reuse Policies for Potable Use

Edited by Cecilia Tortajada and Choon Nam Ong

Hydrosocial Territories and Water Equity

Theory, Governance and Sites of Struggle

Edited by Rutgerd Boelens, Ben Crow, Jaime Hoogesteger, Flora E. Lu, Erik Swyngedouw and Jeroen Vos

Energy for Water

Regional case studies

Edited by Christopher Napoli

The Water Legacies of Conventional Mining

Edited by James E. Nickum, David B. Brooks, Anthony Turton and Surina Esterhuyse

Notes on Contributors

Karen Bakker is a Professor and Canada Research Chair in Political Ecology at the Department of Geography/Program on Water Governance, University of British Columbia, Canada.

Huiping Chen is a Professor in the School of Law at Xiamen University, China.

Liping Dai is a postdoctoral researcher at the Utrecht Centre for Water, Oceans and Sustainability Law, Faculty of Law, Economics and Governance, Utrecht University, the Netherlands.

David Devlaeminck is a PhD candidate at China International Water Law Programme (CIWL), School of Law, Xiamen University, China.

Jurian Edelenbos is Professor and academic director at the Department of Public Administration, Erasmus University, the Netherlands.

Yan Feng is based at the Asian International Rivers Centre at Yunnan University, China.

Vivian Louis Forbes is an Adjunct Research Professor at the National Institute for South China Sea Studies, China.

Velma I. Grover is based at the Centre for Engineering and Public Policy in the School of Engineering Practice, McMaster University, Canada.

Xiuli Han is based at the China International Water Law, School of Law, Xiamen University, China.

Daming He is based at the Asian International Rivers Centre at Yunnan University, China.

Yanmei He is based at the Economic Law School, Shanghai University of Political Science and Law, China.

Petra Hellegers is based at the Water Resources Management Group, Wageningen University, the Netherlands.

Mirja Kattelus is a doctoral student at the Water and Development Research Group, Aalto University, Finland.

Marko Keskinen is a University Lecturer at the Water and Development Research Group, Aalto University, Finland.

Aysegül Kibaroglu is a Professor at, and Chair of, the Department of Political Science and International Relations, Faculty of Economics, Administrative and Social Sciences, MEF University, Turkey.

NOTES ON CONTRIBUTORS

Matthijs Kok is part-time professor of Flood Risk at the Faculty of Civil Engineering and Geosciences, Delft University of Technology, the Netherlands.

Gail Krantzberg is Professor of Civil Engineering at the Centre for Engineering and Public Policy in the School of Engineering Practice, McMaster University, Canada.

Stefan Kuks is Professor of Innovation and Water Policy Implementation at the School of Management and Governance, Institute for Innovation and Governance Studies, Twente Water Centre, University of Twente, the Netherlands.

Matti Kummu is Assistant Professor at the Water and Development Research Group, Aalto University, Finland.

Christina Leb is Senior Water Resources Specialist at the World Bank, USA.

Jing Lee is a PhD candidate at the Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia (UKM), Malaysia.

Seungho Lee is Professor at the Graduate School of International Studies, Korea University, Republic of Korea.

Bo Libert is Regional Adviser at the United Nations Economic Commission for Europe, Switzerland.

Yang Liu is a PhD student at Ghent University, Belgium.

Bjørn-Oliver Magsig is research fellow at the Department of Environmental and Planning Law, Helmholtz Centre for Environmental Research, Germany.

Owen McIntyre is Senior Lecturer at the Faculty of Law, University College Cork, National University of Ireland.

James E. Nickum is an institutional economist affiliated to the IWRA, the Centre for Water and Development at SOAS, UK, and the University of Hong Kong, China.

Emma S. Norman is Department Chair at the Department of Science/Native Environmental Science Program, Northwest Indian College, USA.

Marleen van Rijswijk is Professor of European and Dutch Water Law at the Utrecht Centre for Water, Oceans and Sustainability Law, Department of Law, Utrecht University, the Netherlands.

Aura Salmivaara is based at the Water and Development Research Group, Aalto University, Finland.

Yu Su is based in the China International Water Law Team, School of Law, Xiamen University, China.

Olli Varis is Professor at the Water and Development Research Group, Aalto University, Finland.

Karina Vink is a postdoctoral researcher at the National Institute for Material Science, Japan.

Wenling Wang is based at the Asian International Rivers Centre at Yunnan University, Kunming, China.

Patricia Wouters is a Professor in the School of Law at Xiamen University, China, and Director of the China International Water Law Programme (CIWL).

Acknowledgements

The editors would like to sincerely thank the Xiamen University School of Law for hosting the first international water law symposium in China. Thanks are especially due to the former Dean, Professor Chongli Xu; Vice-Dean Professor Yansheng Zhu; Professor Huaqun Zeng, former Director of the International Economic Law Institute of Xiamen University and now Dean of the Faculty of Law, Macau University of Science and Technology; and all of our colleagues at Xiamen University School of Law for their strong support of China International Water Law (CIWL) and its ongoing research.

We the editors are also enormously grateful to the CIWL research team and to all of the participants at the symposium, whose contributions have made this book possible. Special thanks to Professor Owen McIntyre, Faculty of Law, University College Cork, who helped with preparing this book version and who continues to assist our CIWL research scholars, and to Dr. Sergei Vinogradov, Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, for substantive contributions, editorial support and assistance.

We are grateful to Professor Marleen van Rijswijk, Director of the Utrecht University Centre for Water, Oceans and Sustainability Law, and all of the Utrecht law team for co-convening and contributing directly to the success of the international water law symposium. Their enthusiastic support for our CIWL researchers and generous assistance with this collection are much appreciated.

Thanks to the Water International editorial team for their helpful guidance throughout the process, and to Carolyn Haynes, Emily Ross and others at Taylor & Francis who have brought our manuscripts to printed fruition. Deep thanks go to the many peer reviewers who generously gave their time and effort to help us to improve the quality of the manuscripts.

A final note of gratitude to our CIWL research team for their assistance in many important ways: Dr. Yu Su, Assistant Professor, Xiamen University, School of Law, and our PhD candidates, Nabaat Tasnima Mahbub, Flavia Loures and especially David Devlaeminck. Last but not least, a big thanks to Dr. Liping Dai, Associate Professor, Hubei University of Economics and Postdoctoral Researcher at Utrecht University, School of Law, who collected and processed these manuscripts along the way. It has been a pleasure to work with each and all of you.

Contents

<i>Citation Information</i>	ix
<i>Notes on Contributors</i>	xiii
<i>Acknowledgements</i>	xv
1 Introduction <i>Patricia Wouters, Huiping Chen, James E. Nickum and David Devlaeminck</i>	1
PART 1: The building blocks of cooperation on shared waters	
2 One step at a time: international law and the duty to cooperate in the management of shared water resources <i>Christina Leb</i>	13
3 The human right to water and foreign investment: friends or foes? <i>Huiping Chen</i>	25
4 Ten building blocks for sustainable water governance: an integrated method to assess the governance of water <i>Marleen van Rijswijk, Jurian Edelenbos, Petra Hellegers, Matthijs Kok and Stefan Kuks</i>	40
5 Transboundary water law and vulnerable people: legal interpretations of the ‘equitable use’ principle <i>Karina Vink</i>	58
6 The governance of wetland ecosystems and the promotion of transboundary water cooperation – opportunities presented by the Ramsar Convention <i>Jing Lee</i>	70

CONTENTS

PART 2: International experiences

- 7 The UNECE Water Convention and the development of transboundary cooperation in the Chu-Talas, Kura, Drin and Dniester River basins
Bo Libert 85
- 8 Do good fences make good neighbours? Canada-United States transboundary water governance, the Boundary Waters Treaty, and twenty-first-century challenges
Emma S. Norman and Karen Bakker 100
- 9 Transboundary water management: lessons learnt from North America
Velma I. Grover and Gail Krantzberg 115
- 10 An analysis of Turkey's water diplomacy and its evolving position vis-à-vis international water law
Aysegül Kibaroglu 131

PART 3: China's international waters and the potential for cooperation

- 11 Identifying China's transboundary water risks and vulnerabilities – a multidisciplinary analysis using hydrological data and legal/institutional settings
Yan Feng, Daming He and Wenling Wang 146
- 12 Contemporary legal analysis of China's transboundary water regimes: international law in practice
Yu Su 160
- 13 China's practice on the non-navigational uses of transboundary waters: transforming diplomacy through rules of international law
Yanmei He 180
- 14 Benefit-sharing and upstream/downstream cooperation for ecological protection of transboundary waters: opportunities for China as an upstream state
Owen McIntyre 196
- 15 Approaches to investment in Chinese transboundary waters
Xiuli Han 219
- 16 Mapping Asia's trans-boundary waters, with a focus on China
Vivian Louis Forbes 235

CONTENTS

PART 4: China's southbound basins

- 17 China's southbound transboundary river basins: a case of asymmetry 248
Mirja Kattelus, Matti Kumm, Marko Keskinen, Aura Salmivaara and Olli Varis
- 18 Water security in Himalayan Asia: first stirrings of regional 274
cooperation?
Bjørn-Oliver Magsig
- 19 Transboundary water cooperation on the Yarlung 286
Zangbo/Brahmaputra – a legal analysis of riparian state practice
Yang Liu
- 20 Benefit sharing in the Mekong River basin 307
Seungho Lee

PART 5: Innovative approaches to cooperation of China's shared domestic waters

- 21 A new perspective on water governance in China: 321
Captain of the River
Liping Dai
- 22 Exploring China's approach to implementing 'eco-compensation' schemes: 334
the Lake Tai watershed as case study considered through a legal lens
Liping Dai
- 23 Conclusion: lessons and observations 353
Patricia Wouters, Huiping Chen, James E. Nickum and David Devlaeminck
- Appendices* 364
Index 371

Citation Information

The chapters in this book were originally published in various special issues of *Water International*. When citing this material, please use the original page numbering for each article, as follows:

Chapter 2

One step at a time: international law and the duty to cooperate in the management of shared water resources

Christina Leb

Water International, volume 40, issue 1 (2015) pp. 21–32

Chapter 3

The human right to water and foreign investment: friends or foes?

Huiping Chen

Water International, volume 40, issue 2 (2015) pp. 297–311

Chapter 4

Ten building blocks for sustainable water governance: an integrated method to assess the governance of water

Marleen van Rijswick, Jurian Edelenbos, Petra Hellegers, Matthijs Kok and Stefan Kuks

Water International, volume 39, issue 5 (2014) pp. 725–742

Chapter 5

Transboundary water law and vulnerable people: legal interpretations of the ‘equitable use’ principle

Karina Vink

Water International, volume 39, issue 5 (2014) pp. 743–754

Chapter 6

The governance of wetland ecosystems and the promotion of transboundary water cooperation – opportunities presented by the Ramsar Convention

Jing Lee

Water International, volume 40, issue 1 (2015) pp. 33–47

Chapter 7

The UNECE Water Convention and the development of transboundary cooperation in the Chu-Talas, Kura, Drin and Dniester River basins

Bo Libert

Water International, volume 40, issue 1 (2015) pp. 168–182

Chapter 8

Do good fences make good neighbours? Canada-United States transboundary water governance, the Boundary Waters Treaty, and twenty-first-century challenges

Emma S. Norman and Karen Bakker

Water International, volume 40, issue 1 (2015) pp. 199–213

Chapter 9

Transboundary water management: lessons learnt from North America

Velma I. Grover and Gail Krantzberg

Water International, volume 40, issue 1 (2015) pp. 183–198

Chapter 10

An analysis of Turkey's water diplomacy and its evolving position vis-à-vis international water law

Aysegül Kibaroglu

Water International, volume 40, issue 1 (2015) pp. 153–167

Chapter 11

Identifying China's transboundary water risks and vulnerabilities – a multidisciplinary analysis using hydrological data and legal/institutional settings

Yan Feng, Daming He and Wenling Wang

Water International, volume 40, issue 2 (2015) pp. 328–341

Chapter 12

Contemporary legal analysis of China's transboundary water regimes: international law in practice

Yu Su

Water International, volume 39, issue 5 (2014) pp. 705–724

Chapter 13

China's practice on the non-navigational uses of transboundary waters: transforming diplomacy through rules of international law

Yanmei He

Water International, volume 40, issue 2 (2015) pp. 312–327

Chapter 14

Benefit-sharing and upstream/downstream cooperation for ecological protection of transboundary waters: opportunities for China as an upstream state

Owen McIntyre

Water International, volume 40, issue 1 (2015) pp. 48–70