

The Hague Academy of International Law

International Law for a Water-Scarce World

Edith Brown Weiss

MARTINUS NIJHOFF PUBLISHERS

THE HAGUE ACADEMY OF INTERNATIONAL LAW

International Law for a Water-Scarce World

by

Edith Brown Weiss



MARTINUS NIJHOFF PUBLISHERS

LEIDEN • BOSTON

Library of Congress Cataloging-in-Publication Data

Weiss, Edith Brown, 1942-

International law for a water-scarce world / by Edith Brown Weiss.

pages cm. -- (The Hague Academy of international law monographs ; volume 7)

Includes bibliographical references and index.

ISBN 978-90-04-25040-6 (hardback : alk. paper) -- ISBN 978-90-04-25041-3 (e-book) 1.

Water--Law and legislation. 2. Water rights (International law) 3. Right to water. I. Title.

K3496.W45 2013

341.44--dc23

2013027422

ISBN 978-90-04-25040-6 (hardback)

ISBN 978-90-04-25041-3 (e-book)

Copyright 2013 The Hague Academy of International Law.

Published by Koninklijke Brill NV, Leiden, The Netherlands.

Koninklijke Brill NV incorporates the imprints BRILL, Global Oriental, Hotei Publishing, IDC Publishers and Martinus Nijhoff Publishers.

All rights reserved. No part of this publication may be reproduced, translated, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from the publisher.

Authorization to photocopy items for internal or personal use is granted by Koninklijke Brill NV provided that the appropriate fees are paid directly to The Copyright Clearance Center, 222 Rosewood Drive, Suite 910, Danvers MA 01923, USA.

Fees are subject to change.

This book is printed on acid-free paper.



International Law for a Water-Scarce World

List of Acronyms and Abbreviations

CBD	Convention on Biological Diversity
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CESCR	United Nations Committee on Economic, Social and Cultural Rights
CIC Plata	Comité Intergubernamental Coordinador de los Países de la Cuenca del Plata (Intergovernmental Coordinating Committee for the Countries of the Plata Basin)
CRC	Convention on the Rights of the Child
DANIDA	Danish International Development Agency
EU WFD	European Union Water Framework Directive
EU	European Union
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
GEO	Global Environment Outlook
HRC	United Nations Human Rights Council
IACHR	Inter-American Commission on Human Rights
IBRD	International Bank for Reconstruction and Development
IBWC	International Boundary Water Commission (Mexico—United States)
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICJ	International Court of Justice
ICPDR	International Commission for the Protection of the Danube River
ICPR	International Commission for the Protection of the Rhine
IDB	Inter-American Development Bank
IJC	International Joint Commission (Canada-United States)
IKSO	International Commission for the Protection of the Oder River

ILA	International Law Association
ILC	International Law Commission
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
IWT	International Water Tribunal
MDG	Millennium Development Goals
MEA	Multilateral Environmental Agreement
MERCOSUR	Mercado Común del Sur (Southern Common Market)
MRC	Mekong River Commission
NACEC	North American Commission on Environmental Cooperation
NAFTA	North American Free Trade Agreement
NGO	Non-governmental Organization
OHCHR	Office of the High Commissioner for Human Rights
OKACOM	Okavango River Basin Water Commission
OMVS	Organisation pour la Mise en Valeur du Fleuve Sénégal (Senegal River Basin Organization)
PCA	Permanent Court of Arbitration
PCIJ	Permanent Court of International Justice
PIC	Permanent Indus Commission
SACOSAN	South Asian Conference on Sanitation
SADC	Southern African Development Community
SCM	Subsidies and Countervailing Measures
SIDA	Swedish International Development Cooperation Agency
TBT	Technical Barriers to Trade
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UDHR	Universal Declaration of Human Rights
UN DRIP	United Nations Declaration on the Rights of Indigenous Peoples
UN FAO	United Nations Food and Agriculture Organization
UN Watercourses Convention	United Nations Convention on the Law of Non-Navigational Uses of International Watercourses
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNECE Watercourse Convention	United Nations Economic Commission for Europe (UN ECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly

UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WCD	World Commission on Dams
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

Acknowledgments

This book is based upon my lectures at The Hague Academy of International law on *The Evolution of International Water Law*. It is a great honor to deliver a course at the Hague Academy, and I appreciate very much the opportunity to have done so. I am deeply grateful to the Curatorium of the Hague Academy for granting permission to publish this book as part of The Hague Academy's monograph series.

The lectures at The Hague Academy focused on international water law. In selecting this topic, I did so hesitantly, because of the significant contributions that my colleagues and friends have already made. The research presented here is intended to explore the multiple dimensions of international water issues, to identify challenges to international water law, and to contribute to the further development of the field.

Because of the growing importance of international water basins to the integrated management of fresh water resources and to international water law, the book includes a separate chapter on international water institutions. Lydia Slobodian, a lawyer and former research assistant at Georgetown Law, is co-author of this chapter.

Many people deserve my deep appreciation for making the book and the preceding lectures possible. These include my former research assistants at Georgetown Law, who are now or were at the time lawyers: Lauren Gaffney, Jennifer Hurst Hoffpauir, Amanda Johnson, Valentin Jeutner, Dongho Lee, Tanya Karina Lat, Andrew Petracca, Kiran Sahdev, Lori Scheetz, Lydia Slobodian, Benjamin Szilagyi, and Tracy Stitt. I am also grateful to Pierre Kressmann at Covington and Burling for formatting the many figures for the lectures and to Peter Trooboff for making this possible.

Thanks also go to Georgetown Law, whose support for this book and the preceding lectures has been invaluable. Marylin Raisch, the international law librarian, and the library staff responded expertly to the many demanding tasks associated with this research. Betsy Kuhn provided excellent administrative assistance.

My husband, Charles Weiss, deserves special thanks for his unfailing support, his wide-ranging intellect, and his insightful contributions.

Table of Contents

List of Figures and Tables	ix
List of Acronyms and Abbreviations	xi
Acknowledgments	xv
Introduction: The Fresh Water Crisis	1
I. The Problem of Fresh Water Availability	3
II. The Problem of Water Quality	7
III. Implications for Water Law	9
Chapter I Principles of International Water Law	11
I. International Water Law Principles	12
A. Absolute territorial sovereignty	12
B. Absolute territorial integrity	15
C. Prior appropriation	16
D. Restricted sovereignty and community of interests	21
II. Obligations in International Water Law	25
A. The substantive rules	26
B. The procedural rules	32
C. Liability	35
III. The Treatment of Ground Water	36
A. Territorial sovereignty	40
B. Protection of recharge and discharge areas	45
C. Prevention of pollution	47
D. Conservation of fossil aquifers	48
IV. Concluding Comments	49
Chapter II Challenges For International Water Law	51
I. Critique of Existing Water Law	51
A. The hydrological and ecological perspectives	52
B. The intergenerational perspective	56
C. The market perspective	58

D.	The water demand perspective	60
E.	The water security perspective	62
	Foreign land and water investments	63
	Virtual water issues	66
II.	Fresh Water as a Global Resource	67
A.	Fresh water resource depletion and degradation as a global threat	67
B.	Fresh water resources as a common concern of humankind	70
C.	Global data on fresh water	75
III.	Concluding Comments	76
Chapter III International Water Agreements		79
I.	The History of International Water Agreements	80
A.	The database for international water agreements	80
B.	The global historical trends	82
	Eighteenth and nineteenth centuries and before	84
	The twentieth century	85
	The twenty-first century	88
	Evolution in content of the agreements	91
	Ground water in international agreements	93
C.	Historical trends by region	96
	Europe	96
	Africa	99
	Asia-Middle East	102
	North-Central America	104
	South America	107
	Comparisons among regions	108
D.	The agreements as living instruments	109
II.	The Overarching Agreements	111
A.	The 1997 United Nations Convention on the Law of Non-Navigational Uses of International Watercourses	111
B.	ILC Draft Articles on Transboundary Aquifers	114
C.	Other global legal instruments: ILA Rules and the Bellagio Draft Treaty	116
III.	Concluding Comments	119
Chapter IV Settlement of International Water Disputes		121
I.	Trends in the Characteristics of International Water Disputes	123
A.	The subject matter of disputes: the rise of competing uses	123
B.	The disputants: increasing importance of new actors	126
II.	Dispute Settlement Procedures	128
A.	International judicial settlement	128
B.	International arbitration	133
C.	Fact-finding commissions	135
D.	Conciliation	139
E.	Mediation and good offices	139

F.	Negotiation	142
G.	The experiment with NGO international water tribunals	143
H.	Rhine navigation tribunals	147
I.	National courts	147
III.	Provisions for Dispute Settlement in International Water Agreements	151
IV.	Concluding Comments	157
Chapter V Fresh Water Institutions		161
I.	History and evolution	161
II.	Scope and coverage	166
III.	Structure and function	170
A.	Problem identification and assessment	171
B.	Information collection and monitoring	173
C.	Information dissemination and exchange	174
D.	Coordination of national and international activities	175
E.	Substantive norm and rulemaking	175
F.	Supervision and enforcement	177
G.	Direct operational activities	178
H.	Dispute resolution	179
I.	Concluding observations	180
IV.	Effectiveness	180
V.	Concluding Observations	188
Chapter VI Right to Water		191
I.	The Intragenerational Right to Water	196
A.	Water quality	196
B.	Water quantity	197
C.	Reasonable access	199
D.	Information, participation, non-discrimination, and access to justice	205
II.	The Intergenerational Aspects of the Right to Water	205
III.	Legal Bases for A Right to Water	209
A.	Developments in international recognition of a human right to water	209
B.	A Right to water as embedded in international human rights law	214
	Right to adequate standard of living	215
	Right to food	216
	Right to health	217
	Right to life	218
	Right to development	220
	Independent right to water	222
	Concluding comments	223
IV.	Implementing a Right to Water	224
V.	The Right to Water in National Constitutions and Local Instruments	227
VI.	Indigenous Peoples' Right to Water	231

A. Definition of indigenous people	232
B. International recognition of indigenous right to water	234
VII. The Accompanying Right to Sanitation	240
VIII. Concluding Comments	241
Chapter VII Water Markets and International Trade Law	243
I. Transboundary Water Movements	245
A. Water flows in international watercourses and transboundary aquifers	246
B. Transboundary market in water products	249
C. Transfers of bulk water	251
Treaty-based international water transfers	251
Government to government contractual transfers	252
Transfers between government and foreign private party	255
Transfers between private parties in different countries	255
Efforts to limit bulk transfers of water	256
II. The Relevance of WTO GATT 1994 to Water Markets	259
A. Water as a good or product	259
B. The applicable GATT provisions	263
III. Should WTO GATT 1994 Apply to Bulk Water Transfers?	266
IV. Options for Clarifying Whether WTO GATT 1994 Applies	268
A. Statement and ordinary decision	269
B. Authoritative interpretation of the Agreement	270
C. Waiver	272
D. Amendment	274
V. Water subsidies and water-related domestic support	276
VI. Virtual Water Transfers	278
A. The concept of virtual water transfers	278
B. Water footprints and water-intensity standards	280
C. Tariff adjustments and quotas to regulate imports and exports of water-intensive products	282
VII. Concluding Comments	284
List of Cases and Arbitrations	285
Bibliography	289
Index	317

List of Figures and Tables

Figures

Fig. III-1.	Eighteenth- and Nineteenth-Century Trends by Treaty Subject Matter	84
Fig. III-2.	Twentieth Century Trends by Treaty Subject Matter	86
Fig. III-3.	Treaty Subject Matter 1901-1950	87
Fig. III-4.	Treaty Subject Matter 1951-2000	88
Fig. III-5.	Twenty-First-Century Trends by Treaty Subject Matter by Region	89
Fig. III-6.	Trends in Treaty Subject Matter 2000-2010	90
Fig. III-7.	New Water Agreements in Europe by Treaty Subject Matter, 1901-1950	97
Fig. III-8.	New Water Agreements in Europe by Treaty Subject Matter, 1951-2000	98
Fig. III-9.	New Water Agreements in Africa by Treaty Subject Matter, 1901-1950	100
Fig. III-10.	New Water Agreements in Africa by Treaty Subject Matter, 1951-2000	101
Fig. III-11.	New Water Agreements in Asia by Treaty Subject Matter, 1901-1950	103
Fig. III-12.	New Water Agreements in Asia by Treaty Subject Matter, 1951-2000	104
Fig. III-13.	New Water Agreements in North-Central America by Treaty Subject Matter, 1901-1950	106
Fig. III-14.	New Water Agreements in North-Central America by Treaty Subject Matter, 1951-2000	106
Fig. III-15.	New Water Agreements in South America by Treaty Subject Matter, 1901-1950	107
Fig. III-16.	New Water Agreements in South America by Treaty Subject Matter, 1951-2000	108
Fig. IV-1.	International Joint Commission: Canada-United States References under Article IX of the 1909 Boundary Waters Treaty	137
Table IV-1.	Cases Brought before the Second International Water Tribunal, that Went to a Jury Hearing	144

Fig. IV-2.	New International Water Agreements with Dispute Resolution Provisions by Decade by Region	153
Fig. IV-3.	Types of Dispute Resolution Procedures in New International Water Agreements	154

Tables

Table IV-1.	Cases Brought before the Second International Water Tribunal, that Went to a Jury Hearing	144
-------------	---	-----

Introduction: The Fresh Water Crisis

The fresh water crisis is the new environmental crisis of the 21st century. By 2030 global water requirements are expected to nearly double those in 2005, and to exceed current accessible and reliable supply levels by 40%.¹ By 2050, 993 million people are projected to live in cities with perennial water shortages; 3.1 billion will confront seasonal water shortages within their urban areas.² Many countries will be water stressed. Droughts will mean that people in some regions will not have enough water to grow food crops, especially grains. Some may lack water even to satisfy basic human needs for drinking, bathing and sanitation. And the lack of fresh water may devastate ecosystems on which people depend for sustenance and livelihoods. While desalination may help some, it is still energy intensive and limited, and has environmental consequences. Fresh water has become a pressing global concern.

Fresh water is one substance that we must have to survive and for which there is no known substitute. Technically, water does not disappear; it only changes form by means of the hydrological cycle. The hydrological cycle includes the atmosphere and clouds, fresh water, and marine water. Fresh water constitutes only about 2.5% of the water on the planet. Of this 2.5%, 0.4% lies in surface waters (rivers, lakes and swamps); 0.8% in permafrost; 68.7% in glaciers and ice caps; and 30.1% in ground water.³ Ground water aquifers are often poorly identified and mapped. While most aquifers are theoretically rechargeable, many are being pumped in excess of their recharge rate, which can eventually deplete them. Other large and important aquifers are not rechargeable and may be millions of years old, so extracting the water depletes the aquifer.

1 2030 Water Resources Group, *Charting Our Water Future*, 2009, at p. 5.

2 Robert L. McDonald, Pamela Green, Deborah Balazx M. Fekete, Carmen Revenga, Megan Todd, and Mark Montgomery, "Urban Growth, Climate Change, and Fresh-water Availability," *Proceedings National Academy of Sciences*, Vol. 108 (2011), pp. 6312-6317, at p. 6313, available at <http://www.pnas.org/content/108/15/6312.full> (last visited October 31, 2012).

3 United Nations Environment Programme (UNEP), *Global Environment Outlook 4*, Nairobi, UNEP, 2007, p.118.

Most attention to fresh water has focused on problems of water supply. Will sufficient fresh water be available to meet demand and will it be of the quality needed? How will the supply be allocated and used? The focus on the supply of water has been at the expense of focusing on the demand for fresh water. Demand is the other side of water supply. The demand side has been neglected internationally, within countries, and at the community level. This needs to change.

In a similar vein, fresh water has frequently been discussed only in terms of rivers, streams, aquifers, and lakes. But fresh surface water and aquifers linked to rivers and/or lakes exist within the broader context of a basin ecosystem, in which the quantity and quality of fresh water is affected by land use and by disposal of pollutants, including into the atmosphere. Thus, fresh water needs an integrated analysis as a resource within water basin ecosystems.

Fresh water must also be viewed as an element of the climate system. The best climate models predict that climate change will result in more droughts, floods, sea level rise, melting of glaciers, and more frequent and more severe storms.⁴ Moreover, recent scientific research indicates that the hydrological cycle itself may be intensifying and accelerating, which means that the rate at which water evaporates from the oceans, returns as precipitation, runs into lakes and marine bodies or evaporates from land is increasing.⁵ Climate change is expected to make this more pronounced. These changes in the hydrological cycle are expected to decrease the availability of fresh water and to increase the frequency and severity of storms and other water related events. Such developments could have profound effects on the well-being of both present and future generations.

Moreover, some scientists have recently concluded that we are entering a new epoch: the Anthropocene.⁶ In the Anthropocene, human beings are the major force of change. This means that we have attained a status equivalent to the great forces of nature, with the power to transform the globe dramatically. The speeding up of the hydrological cycle is only one example. There is also evidence that human beings are responsible for changes in the nitrogen and carbon cycles and for unprecedented rates of species extinction.⁷ Human activities may even

4 See Byron Bates, Zbigniew W. Kundzewica, Shaohong Wu, Jean Palutikof, eds., *Climate Change and Water*, (IPCC Technical Paper no. VI), Geneva, Intergovernmental Panel on Climate Change, 2008.

5 James S. Famiglietti, Written Testimony, Hearing on Perspectives on California Water Supply: Challenges and Opportunities, Subcommittee on Water and Power, Committee on Natural Resources, U.S. House of Representatives, January 25, 2010, available at <http://naturalresources.house.gov/calendar/eventsingle.EventID=166294>; World Bank, *Water and Climate Change: Understanding the Risks and Making Climate-Smart Investment Decisions*, 2009, at p. 4.

6 E.g., Will Steffen, Paul J. Crutzen, John R. McNeill, "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature," *Ambio: A Journal of the Human Environment*, Vol. 36 (2007), pp. 614-621.

7 *Ibid.* at p. 617.