

Lilin Kerschbaumer

Water Ethics, Governance and Sustainability

Theory and Case Study
on Northwest China

Metropolis-Verlag
Marburg 2016

Bibliographic information published by Die Deutsche Bibliothek

Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the Internet at <<http://dnb.ddb.de>>.

Metropolis-Verlag für Ökonomie, Gesellschaft und Politik GmbH

<http://www.metropolis-verlag.de>

Copyright: Metropolis-Verlag, Marburg 2016

All rights reserved

ISBN 978-3-7316-1206-3

Table of Contents

List of Tables and Figures	13
List of Abbreviations	15
1. Introduction	17
2. Values in water and waterscapes	27
2.1 Valuing nature	27
2.2 Ecosystem Services Approach.....	35
2.3 Values in water and waterscapes	39
2.4 Conclusion.....	44
3. Ethics of sustainable water use.....	45
3.1 The Universe of Discourse in water ethics	47
3.2 The “currency” of sustainable development.....	50
3.3 Distribution of natural capital.....	58
3.4 Water as natural capital	66
3.5 Ethical nexuses in water use.....	73
3.5.1 The Water-Human-Sufficiency Nexus	74
3.5.2 The Water-Production/Consumption nexus	77
3.5.3 The Water-Energy-Climate nexus	81
3.5.4 The Waterscapes nexus	84
3.6 Ethics of sustainable water use.....	89
3.7 Conclusion.....	92

4. China: sustainability and water governance.....	95
4.1 Water and waterscapes	98
4.2 Water governance	104
4.3 Water ethics	113
4.3.1 The Water-Human-Sufficiency nexus	113
4.3.2 The Water-Production/Consumption nexus	117
4.3.3 The Water-Energy-Climate nexus	121
4.3.4 The Waterscapes nexus	126
4.4 Ethics of sustainable water use	130
4.5 Conclusion	134
5. Case study: The Heihe River Basin	135
5.1 WCDP: The case of water	136
5.2 Water conflicts and governance in HRB	142
5.2.1 Upstream: Qilian Mountain Region	145
5.2.2 Midstream: Zhangye Oasis	149
5.2.3 Downstream: Ejina Oasis	154
5.2.4 Maintaining the healthy life of Heihe?	160
5.3 A holistic approach	164
5.3.1 HLR: a strong sustainability perspective	165
5.3.2 Adaptive water management	166
5.3.3 Boating through the desert	169
5.4 Conclusion	174
6. Conclusion and outlook appendices.....	175
Appendices	179
Appendix a: Geographical distribution of water resources in China (1997-2014).....	179
Appendix b: Three major type of water resources in China (1997-2014)	180

Appendix c: Water use and consumption in China (1997-2014)	181
Appendix d: Environmental quality standards for surface water	182
Appendix e: Percentage of water with Level-III and above in different water bodies (1997-2014)	184
Appendix f: Water resource per capita (selected countries).....	185
Appendix g: China sustainable development indicators based on CSSDI.....	186
Appendix h Route “Boating through the Desert”.....	188
Literature.....	189