

Advances in Asian Human-Environmental Research

Marcus Nüsser *Editor*

Large Dams in Asia

Contested Environments between
Technological Hydroscaapes and
Social Resistance

 Springer

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and Social Resistance

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ISSN 1879-7180
ISBN 978-94-007-2797-7
DOI 10.1007/978-94-007-2798-4
ISSN 1879-7199 (electronic)
ISBN 978-94-007-2798-4 (eBook)
Springer Dordrecht Heidelberg New York London

Library of Congress Control Number: 2013952931

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Printed on acid-free paper

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Preface

Based on the underlying paradigms of modernisation and the concrete idea of implementation of large infrastructure projects, the quest for national development and improvement of local livelihoods has generated a strong boost for the demand of large dams in the Global South, especially in Asia. The belief in the panacea that gargantuan hydro-projects offer for the betterment of nations and peoples has run roughshod over other environmental and social concerns. Whereas these large-scale transformations of fluvial environments into technological hydroscares serve to provide hydropower, flood control, and water supply for irrigation and industrial and urban uses, their massive adverse effects have evoked controversies of developmental and environmental impacts.

The contributions in this edited volume explore the various dimensions of the large dams controversy in Asia from a critical perspective. Most of these contributions originate from the research project 'Large dams: Contested environments between hydro-power and resistance', which ran from 2008 to 2011 as part of the Cluster of Excellence 'Asia and Europe in a Global Context: Shifting Asymmetries in Cultural Flows', Heidelberg University. I am grateful to the German Research Council (DFG) and the German Council of Science and Humanities (Wissenschaftsrat) for funding. The continuous support of the directorate and administrative staff of the cluster is gratefully acknowledged. I am indebted to Thomas Lennartz (Heidelberg), who worked hard to standardize formats of all individual contributions. It is hoped that this volume will be beneficial to those looking to gain an overview of the large dams debate. At the same time, the individual chapters may offer insights from case studies that should be useful to a specialist audience.

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Marcus Nüsser

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Abbreviations

| | |
|-------------------|---|
| ADHPL | Allain Duhangan Hydro Power Limited |
| BCE | before the Common Era |
| BNP | Bhakra Nangal Project |
| CAS | Chinese Academy of Sciences |
| CASS | Chinese Academy of Social Sciences |
| CB ratio | cost-benefit ratio |
| CCP CC | Chinese Communist Party Central Committee |
| CDM | Clean Development Mechanism |
| CE | Common Era |
| CER | Certified Emission Reduction |
| CO ₂ | carbon dioxide |
| CO ₂ e | carbon dioxide equivalent |
| CS | Cadastral Survey |
| CV | coefficient of variation |
| DNA | Designated National Authority |
| DOE | Designated Operational Entities |
| DVC | Damodar Valley Corporation |
| EAC | Expert Appraisal Committee |
| EF | exceedance frequency |
| EFR | environmental flow requirement |
| EIA | environmental impact assessment |
| ENSO | El Niño/La Niña-Southern Oscillation |
| ET | emission trading |
| GIS | geographic information systems |
| GHG | greenhouse gas |
| GoS | Geography of Science |
| GUP | Government of Uttar Pradesh |
| GWIL | Gujarat Water Infrastructure Limited |
| HEC | Hydrologic Engineering Center |
| HFC | hydrofluorocarbon |
| IRS | Indian Remote Sensing |

| | |
|------------------|--|
| ICOLD | International Commission on Large Dams |
| IFC | International Finance Corporation |
| JI | joint implementation |
| KWDT | Krishna Water Disputes Tribunal |
| LISS | Linear Imaging Self-Scanning |
| MoEF | Ministry of Environment and Forest, Government of India |
| MPRVD | Multi-purpose River Valley Development |
| MRO | manager reservoir operation |
| MW | megawatt |
| N ₂ O | nitrous oxide |
| NIR | near infrared |
| NGO | non-governmental organisation |
| NRSA | National Remote Sensing Agency |
| P | precipitation |
| PAP | Project Affected Person |
| PDD | Project Design Document |
| PFC | perfluorocarbon |
| Q | hydrologic discharge |
| R&R | resettlement and rehabilitation |
| RBO | River Basin Organisation |
| RS | Revision Survey |
| SANDRP | South Asian Network on Dams, Rivers and People |
| SD | standard deviation |
| SoI | Survey of India |
| SSP | Sardar Sarovar Project |
| SSK | Sociology of Scientific Knowledge |
| STS | Science and Technology Studies |
| SWIR | short-wave infrared |
| TBVSS | Tehri Bandh Virodhi Sangharsh Samiti (Committee to Oppose the Tehri Dam) |
| THDC | Tehri Hydro Development Corporation |
| TINA | There Is No Alternative |
| TVA | Tennessee Valley Authority |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WAPDA | Water and Power Development Authority (Pakistan) |
| WCD | World Commission on Dams |
| WFD | Water Framework Directive |
| WWF | World Wildlife Fund |

Units of Measure

| | | |
|--------------------|-------------------------------|--|
| ft ³ /s | cubic feet per second (cusec) | 1 ft ³ /s \approx 0.028 m ³ /s |
| GW | gigawatt | 1 GW = 1,000,000,000 W |
| ha | hectares | 1 ha = 10,000 m ² |
| kV | kilovolt | 1 kV = 1,000 V |
| maf | million acre feet | 1 acre foot \approx 1233.5 m ³ |
| mha | million hectares | |
| MW | megawatt | 1 MW = 1,000,000 W |
