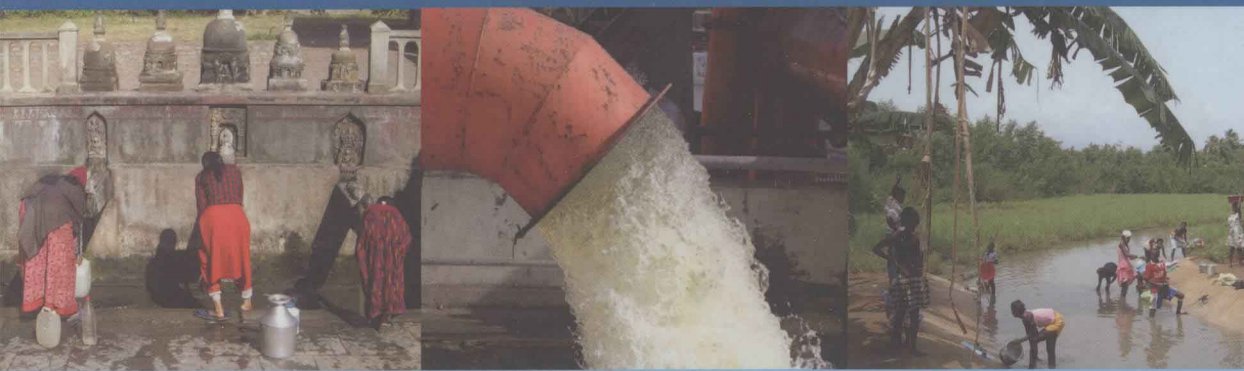


# Water and Sanitation Services

Public Policy and Management



Edited by José Esteban Castro and Léo Heller

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# Water and Sanitation Services

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# List of Acronyms and Abbreviations

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A/A/O	anaerobic–anoxic–oxic
ADB	Asian Development Bank
AdP	Aguas de Portugal
AFLRA	Association of Finnish Local and Regional Authorities
AGBAR	Aigües de Barcelona (Spain)
AIM	Asian Institute of Management (the Philippines)
ANAMMOX	anaerobic ammonia oxidation
ANA	National Water Agency (Brazil)
A/O	anaerobic–oxic
ARBAN	Association for Meeting Basic Needs (Bangladesh)
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
ATO	optimal territorial unit (Italy)
BAF	biological aeration filtration
BANOBRAS	National Works and Public Services Bank (Mexico)
BC	Before Christ
BLM	Bureau of Land Management (US)
BOD	biochemical oxygen demand
BOT	build–operate–transfer
BS	basic sanitation
BUET	Bangladesh University of Engineering and Technology
CA	community of agglomeration ( <i>communauté d'agglomération</i> ) (France)
CADWES	capacity development in water and environmental services (Finland)
CAG	Castalia Advisory Group
CAS	conventional activated sludge
CBC	Canadian Broadcasting Corporation
CBE	Commander of the British Empire
CBO	Congressional Budget Office (US)
CC	community of communes ( <i>communauté de communes</i> ) (France)
CCW	Consumer Council for Water (UK)

CEDECON	Central Department of Economics, Tribhuvan University (Nepal)
CEO	chief executive officer
CEPR	Centre for Economic Policy Research (UK)
CESB	provincial company for water supply and sanitation (Brazil)
CIDIN	Centre for International Development Issues Nijmegen (The Netherlands)
CIREDE	International Centre for Research on Environment and Development (France)
CLTS	community-led total sanitation
CMH	Commission on Macroeconomics and Health (of the WHO)
CNA	National Water Commission (Mexico)
CNRS	National Centre for Scientific Research (France)
COD	chemical oxygen demand
CSS	combined sewer system
CU	urban community (France)
CWA	Clean Water Act (US)
CWEF	Colorado Water Education Foundation (United States)
DALY	disability-adjusted life year
DAM	Dhaka Ahsania Mission (Bangladesh)
DANVA	Danish Water and Waste Water Association
DBP	disinfection by-product
DDC	District Development Committee (Nepal)
DFID	Department for International Development (UK)
DHSP	District Health Strengthening Programme (Nepal)
DMAE	Municipal Department of Water and Sewerage (Porto Alegre, Brazil)
DNA	deoxyribonucleic acid
DPHE	Department of Public Health and Engineering (Bangladesh)
DSK	Dushtha Shasthya Kendra (Bangladeshi NGO)
DSP	delegation of public services (France)
DU	urban district (France)
DWASA	Dhaka Water Supply and Sewerage Authority (Bangladesh)
DWSS	Department of Water Supply and Sewerage (Nepal)
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
ECOSAN	ecological sanitation
ED	endocrine disruptor
EEA	European Economic Area
EMASESA	Empresa Metropolitana de Abastecimiento y Saneamiento de Aguas de Sevilla (Spain)
ENGREF	National Institute for Water and Forestry Management and Engineering (France)
ENPHO	Environment and Public Health Organization (Nepal)
EPCI	inter-communal cooperation organism (France)
ESA	European Space Agency

ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
EU	European Union
FCM	Federation of Canadian Municipalities
FDI	foreign direct investment
FEI	Finnish Environment Institute
FEMA	Federal Emergency Management Agency (US)
FGTS	Employment Guarantee Fund (Brazil)
FLACSO	Latin American Faculty of Social Sciences
FNDAB	National Fund for the Development of Water Sources (France)
GDP	gross domestic product
GIS	geographic information system
GNI	gross national income
GNP	gross national product
GOBACIT	Research Network on Governance, Citizenship, Water Management and Environmental Health in Developing Countries ( <a href="http://www.gobacit.org">www.gobacit.org</a> )
GON	Government of Nepal
GWP	Global Water Partnership
HDI	Human Development Index
hm <sup>3</sup>	cubic hectometres
HSWA	Hazardous and Solid Waste Amendments (US)
IATP	Institute for Agriculture and Trade Policy (US)
IBGE	Brazilian Institute for Geography and Statistics
ICSID	International Centre for the Settlement of Investment Disputes
ICTA	Institute of Environmental Science and Technology (Spain)
ICWE	International Conference on Water and the Environment
IDA	international development agency
IDB	Inter-American Development Bank
IEEB	Institute of Environmental Engineering and Biotechnology (Finland)
IEEE	Institute of Electrical and Electronics Engineers, Inc (US)
IFI	international financial institution
IGU	International Geographical Union
IHE	International Institute for Infrastructural, Hydraulic and Environmental Engineering (Delft, The Netherlands)
IIED	International Institute for Environment and Development (UK)
IIED-AL	International Institute for Environment and Development – America Latina (Argentina)
IMF	International Monetary Fund
IRBM	integrated river basin management
IRC	International Water and Sanitation Centre (Delft, The Netherlands)
IT	information technology
ITN-BUET	International Training Network Center – Bangladesh University of Engineering and Technology
IWA	International Water Association

IWRM	integrated water resources management
JBIC	Japan Bank for International Cooperation
JMP	Joint Monitoring Programme for Water Supply and Sanitation (World Health Organization and United Nations Children's Fund)
KIWASCO	Kenyan water utility operator
km	kilometre
KTH	Royal Institute of Technology (Sweden)
l	litres
lcd	litres per capita per day
LGB	local government body (Bangladesh)
LGED	local government engineering department (Bangladesh)
lpd	litres per day
LPM	local public management (France)
LPUPAP	Local Partnerships for Urban Poverty Alleviation Project (Bangladesh)
LSE	London School of Economics and Political Science
LVSWSB	Lake Victoria South Water Services Board (Kenya)
m <sup>3</sup>	cubic metres
m <sup>3</sup> /d	cubic metres per day
m <sup>3</sup> /s	cubic metres per second
MAF	Ministry of Agriculture and Forestry (Finland)
MAG	Ministry of the Attorney General (Ontario, Canada)
MBR	membrane bioreactor
MCL	maximum contaminant level
MDG	Millennium Development Goal
MEP	Ministry of Environmental Protection (China)
MFC	microbial fuel cell
mg/l	milligrams per litre
MHURD	Ministry of Housing and Urban–Rural Development (China)
MM	Mahila Milan (India)
mm	millimetre
MOE	Ministry of the Environment (Canada)
MWR	Ministry of Water Resources (China)
MWSS	Metropolitan Waterworks and Sewerage System (the Philippines)
NAFTA	North American Free Trade Agreement
NEWAH	Nepal Water for Health
NGO	non-governmental organization
NIMBY	not in my backyard
NMFS	National Marine Fisheries Service (US)
NPDWR	National Primary Drinking Water Regulation (US)
NPS	National Park Service (US)
NSDF	National Slum Dwellers Federation (India)
NSDWR	National Secondary Drinking Water Regulation (US)
NWC	New Water Culture (Spain)
NWS	National Weather Service (US)

NWSC	National Water and Sewerage Corporation (Uganda)
NWSC	Nepal Water Supply Corporation
O&M	operation and maintenance
OECD	Organisation for Economic Co-operation and Development
OFWAT	Office of Water Services (England and Wales)
OPP	Orangi Pilot Project (Pakistan)
OPP-RTI	Orangi Pilot Project – Research and Training Institute (Pakistan)
PAC	powdered activated carbon
PAC	Programme for Accelerating Growth (Brazil)
PCA	principal components analysis
pcpy	per capita per year
p.e.	person equivalent
PESTEL	political and policy, economic, social, technological, environmental and legislative (aspects of water and sanitation services)
PLANASA	National Basic Sanitation Plan (Brazil)
PLC	public limited company
POLISAN	Ethics, Politics and Management in Water and Sanitation (Brazil)
POP	persistent organic pollutant
PNSB	<i>National Survey of Basic Sanitation</i> (Brazil)
PPI	private participation in infrastructure
PRINWASS	Private Participation in Water and Sanitation Services project ( <a href="http://www.prinwass.org">www.prinwass.org</a> )
PROMAGUA	Programme for the Modernization of Water and Sanitation Utilities (Mexico)
PSIRU	Public Services International Research Unit (UK)
PSP	private-sector participation
PSTC	Population Services and Training Centre (Bangladesh)
PUC	Public Utilities Commission (Canada)
PUP	public–public partnership
PWA	Palestinian Water Authority
PWO	People Welfare Organization (Nepal)
PWS	public water supply
PYLL	potential years of life lost
QMRA	quantitative microbial risk assessment
QUANGO	quasi non-governmental organization (England and Wales)
RCRA	Resource Conservation and Recovery Act (US)
REPDA	Public Water Rights Registry (Mexico)
RMB	Chinese yuan renminbi
RMHO	Regional Medical Health Office (Canada)
RO	reversed osmosis
RWA	Regional Water Authority (England and Wales)
SAHOP	Ministry of Human Settlements and Public Works (Mexico)
SAN	new agglomeration syndicate (France)
SARH	Ministry of Agriculture and Hydraulic Resources (Mexico)



SDWA	Safe Drinking Water Act (US)
SEDUE	Ministry of Urban Development and the Environment (Mexico)
SEMARNAT	Ministry of Environment and Natural Resources (Mexico)
SEP	Ministry of Public Education (Mexico)
SEPA	Swedish Environmental Protection Agency
SGAB	Sociedad General de Aguas de Barcelona (Spain)
Sida	Swedish International Development Cooperation Agency
SISS	Superintendent of Sanitary Services (Chile)
SIVOM	multi-purpose inter-communal syndicate ( <i>syndicat intercommunal à vocation multiple</i> ) (France)
SIVU	single-purpose inter-communal syndicate ( <i>syndicat intercommunal à vocation unique</i> ) (France)
SM	mixed syndicate (France)
SNSA	National Department of Environmental Sanitation (Brazil)
SPARC	Society for the Promotion of Area Resource Centres (India)
SRH	Ministry of Hydraulic Resources (Mexico)
SS	suspended solid(s)
SSA	Infrastructure Commission of the Ministry of Health (Mexico)
SSS	separate sewer system
TMDL	total maximum daily load (of pollutants)
TN	total nitrogen
TP	total phosphorus
TSD	treatment, storage and disposal
TSS	total suspended solids
UAB	Autonomous University of Barcelona (Spain)
UDC	Urban Development Centre (Bangladesh)
UF	ultra-filtration
UFMG	Federal University of Minas Gerais (Brazil)
UK	United Kingdom
UN	United Nations
UNAM	National Autonomous University of Mexico
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNESA	United Nations Economic and Social Affairs
UNESCO	United Nations Educational, Scientific and Cultural Organization
UN-Habitat	United Nations Human Settlements Programme
UNICEF	United Nations Children's Fund
UNMP	United Nations Millennium Project
US	United States
USACE	US Army Corps of Engineers
USAID	US Agency for International Development
USBR	US Bureau of Reclamation
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service