KNOWLEDGE HIGHLIGHTS FROM THE WATER GLOBAL PRACTICE 2016-2018

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About the Water Global Practice

Launched in 2014, the World Bank Group’s Water Global Practice brings together financing, knowledge, and implementation in one platform.

By combining the Bank’s global knowledge with country investments, this model generates more firepower for transformational solutions to help countries grow sustainably.

Please visit us at www.worldbank.org/water or follow us on Twitter at @WorldBankWater
As the world’s largest multilateral source of financing for water in developing countries, the World Bank is working closely with partners to achieve “A Water-Secure World for All,” by investing in water solutions that enable universal access, promote water security, and build resilient societies. Below is a selection of reports, case studies and toolkits produced by the Water Global Practice in 2016-2018. The first section highlights studies of global interest along priority themes, while a second section provides a list of publications focusing on specific regions or countries.

For more information: http://www.worldbank.org/water

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GLOBAL

WATER AND THE ECONOMY

UNCHARTED WATERS: THE NEW ECONOMICS OF WATER SCARCITY AND VARIABILITY

Author(s): Damania, Desbureaux, Hyland, Islam, Moore, Rodella, Russ, Zaveri
Focus: Water, Poverty and the Economy

This book presents new evidence to advance our understanding of how rainfall shocks, coupled with water scarcity, affect farms, firms, and families. A key message is that water has multiple economic attributes that entail distinct policy responses at each stage in its cycle of use. If water is not managed more prudently—from source, to tap, and back to source—the crises observed today will become the catastrophes of tomorrow.

HIGH AND DRY: CLIMATE CHANGE, WATER, AND THE ECONOMY
ALSO AVAILABLE IN FRENCH, SPANISH AND ARABIC

Author(s): Water GP | Focus: Water, Poverty and the Economy

The impacts of climate change will be channeled primarily through the water cycle, with consequences that could be large and uneven across the globe. Water-related climate risks cascade through food, energy, urban, and environmental systems. Growing populations, rising incomes, and expanding cities will converge upon a world where the demand for water rises exponentially, while supply becomes more erratic and uncertain. They will jeopardize growth prospects in the regions worst affected and in some of the poorest countries.

WATER, WELL-BEING, AND THE PROSPERITY OF FUTURE GENERATIONS

Author(s): Chase, Damania | Focus: Water, Poverty and the Economy

This discussion paper provides an overview of the poverty-related impacts of inadequate water supply and sanitation and highlights the policy challenges that have emerged in a more populated, polluted, and urbanized world with finite water resources. It highlights the need for sustained changes in individual behavior, more equitable access to services, and incentives for improved water resource stewardship.
PHYSICAL IMPACTS OF CLIMATE CHANGE ON WATER RESOURCES

Author(s): Miralles-Wilhelm, Clarke, Hejazi, Kim, Gustafson, Muñoz-Castillo, Graham | Focus: Water Security and Integrated Resource Management

This paper is an initial study on the physical impacts of climate change on water resources around the world. It covers an integrated qualitative and quantitative understanding of the implications of climate change and mitigation, and the socioeconomic and technological developments on water scarcity and water-energy-food interactions. It illustrates the centrality of water in achieving global climate change goals.

STATE OF KNOWLEDGE ON CLIMATE CHANGE, WATER, AND ECONOMICS

Author(s): Markandya | Focus: Water, Poverty and the Economy

Water is the central driver of the impacts of climate change on society. This working paper shows in economic terms how climate impacts, channeled through water, will affect the economy and society in the coming decades, how these impacts depend in part on the evolution of greenhouse gas (GHG) emissions, and what measures can be taken to address the impacts.

WASH POVERTY DIAGNOSTICS

WATER SUPPLY, SANITATION AND HYGIENE (WASH) POVERTY DIAGNOSTIC INITIATIVE

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world. It provides fact-based recommendations to help policymakers, stakeholders, and donors plan more strategically and equitably. http://worldbank.org/washpdinitiative

Country reports: Bangladesh, Democratic Republic of Congo, Ecuador, Ethiopia, Guatemala, Haiti, India, Indonesia, Mozambique, Niger, Nigeria, Pakistan, Panama, Tajikistan, Tanzania, Tunisia, West Bank & Gaza, Yemen

FINANCING

EASING THE TRANSITION TO COMMERCIAL FINANCE FOR SUSTAINABLE WATER AND SANITATION

Author(s): Goksu, Trémolet, Kolker, Kingdom | Focus: Water Supply and Sanitation

This report brings together the current state of knowledge on water sector finance and sets out the World Bank’s vision for how countries can finance their water and sanitation goals. It calls for countries to place a greater priority on leveraging commercial finance into the sector while at the same time bolstering public funds.

AID FLOWS TO THE WATER SECTOR: OVERVIEW AND RECOMMENDATIONS

Author(s): Winpenny, Trémolet, Cardone, Kolker, Kingdom, Mountsford
Focus: Water Supply and Sanitation

This report, created for the High-Level Panel on Water, provides data and insights on the role of grant funding and concessional financing and recommendations on how to mobilize financing to achieve the water SDG. It includes an inventory of more than 225 institutions that contribute financing and/or technical assistance to the water sector in developing countries.

INTRODUCING COMMERCIAL FINANCE INTO THE WATER SECTOR IN DEVELOPING COUNTRIES

Author(s): Bender | Focus: Water Supply and Sanitation

This guidance note offers borrowers, lenders and government officials a holistic approach on how to build a market for commercial finance in the water sector. It takes readers through a step-by-step process for scoping, designing and building the market, and executing, monitoring, and evaluating the deal.

ACHIEVING UNIVERSAL ACCESS TO WATER AND SANITATION BY 2030: THE ROLE OF BLENDED FINANCE

Author(s): Leigland, Trémolet, Ikeda | Focus: Water Supply and Sanitation

It is essential for service providers to mobilize up-front financing from both private and commercial sources in order to meet SDG 6. This paper lays out common situations in which financial markets and commercial sector finance opportunities can be structured in different countries. It explains how providers offering concessional finance can best use their grant funding to catalyze commercial sector financing through the blending of resources.
FINANCING OPTIONS FOR THE 2030 WATER AGENDA

Author(s): Kolker, Kingdom, Trémolet, Winpenny, Cardone | Focus: Water Supply and Sanitation

This paper was created in preparation for a meeting of the High-Level Panel on Water. The water sector is repositioning itself toward the Sustainable Development Goals (SDGs). With the advent of the SDGs the agenda is much broader covering all aspects of water, water resource management, and irrigation and their sustainability. The water sector is not well equipped to face these new financing challenges. Achieving the new financing paradigm requires a more collaborative approach with all stakeholders playing an active role.

SANITATION AND WATER FOR ALL: HOW CAN THE FINANCING GAP BE FILLED?

Author(s): World Bank Group, UNICEF | Focus: Water Supply and Sanitation

This discussion paper was created in preparation for the Sanitation and Water for All (SWA) High-Level Meeting. It provides a financial framework for country-level dialogue to help governments meet the SDGs. It outlines a range of proposals for using existing financial flows more effectively, including improving the efficiency of existing funding sources (tariffs, taxes, transfers), and mobilizing domestic commercial finance—a largely untapped financial resource to the sector.

SANITATION AND WATER FOR ALL: PRIORITY ACTIONS FOR SECTOR FINANCING

Author(s): World Bank Group, UNICEF | Focus: Water Supply and Sanitation

UNICEF and the World Bank lay out priorities for governments to help leaders create a new financing model to leverage public funds and attract commercial finance. This note covers policies on how to make more efficient use of existing resources, use public funds in a more targeted manner, attract domestic commercial finance, and reduce risk exposure.

BLENDING FINANCING FOR THE EXPANSION OF THE AS-SAMRA WASTEWATER TREATMENT PLANT IN JORDAN

Author(s): Water GP | Focus: Water Supply and Sanitation | Country: Jordan

Many players contributed to a diverse blend of financing to expand a treatment plant for growing populations in Amman and Zarqa. This paper gives an overview of the financing package that included a blend of donor and public funding (viability gap funding), commercial debt, a grant from the Millennium Challenge Corporation and a Build-Operate-Transfer (BOT) contract.
FACILITATED ACCESS TO FINANCE FOR DOMESTIC PRIVATE WATER OPERATORS IN CAMBODIA

Author(s): Water GP | Focus: Water Supply and Sanitation | Country: Cambodia

Limited access to finance was preventing private operators in Cambodia from expanding and improving services. This case study shows how a blend of non-sovereign concessional lending, guarantees, grants, and technical assistance was used to leverage local commercial finance and equity investments of US$24 million to accelerate access to piped water supply.

POOLED MUNICIPAL BOND ISSUANCE IN TAMIL NADU (INDIA)

Author(s): Water GP | Focus: Water Supply and Sanitation | Country: India

To address the inability of small and medium-sized utilities to access financing, the Government of Tamil Nadu created a fund to help towns finance their water and sanitation services by raising capital market resources on a pooled basis. This example demonstrates how pooled financing vehicles can play a critical role in attracting repayable finance to smaller providers, reduce risk, and achieve economies of scale.

SCALING UP BLENDED FINANCING FOR WATER AND SANITATION IN KENYA

Author(s): Water GP | Focus: Water Supply and Sanitation | Country: Kenya

Kenya has experimented with different ways of using blended finance to leverage commercial financing from domestic banks. This case study explains how years of output-based aid support has paved the way for scaling up by utilities through the Kenya Output-Based Aid (OBA) fund that provides grants to water service providers to access commercial loans from domestic lenders for investment projects.
INCLUSION

THE RISING TIDE: A NEW LOOK AT WATER AND GENDER

Author(s): Das | Focus: Social Inclusion

The relationship between water and gender is important to the overall progress on water security and gender equality more broadly. This report provides a framework that shows how gender relations in water reform can influence gender equality and examines the norms and practices related to water that often exacerbate ingrained gender and other hierarchies.

PROVIDING WATER TO POOR PEOPLE IN AFRICAN CITIES EFFECTIVELY: LESSONS FROM UTILITY REFORMS

Author(s): Heymans, Eberhard, Ehrhardt, Riley | Country: Multi-Country

The cases studied show that it is possible for rapidly growing African cities to offer the poorest 40 percent of their residents near-universal access to reliable and affordable water. The technical, financial, and managerial techniques used by utilities in these cities are widely applicable. This study recognizes the achievements of cities that provide relatively good service to the poor.

INCLUDING PERSONS WITH DISABILITIES IN WATER SECTOR OPERATIONS: A GUIDANCE NOTE

Author(s): Mcclain-Nhlapo, Raja, Sivonen, Widyastuty | Focus: Social Inclusion

The ripple effects of the lack of access to water and sanitation services can have serious socioeconomic consequences for persons with disabilities and their families. This comprehensive note identifies entry points for disability-inclusive operations along with systematic and sustainable interventions in World Bank Group activities. It includes case studies, resources, examples of access barriers, and policy recommendations.

PROVIDING SUSTAINABLE SANITATION SERVICES FOR ALL IN WASH INTERVENTIONS THROUGH A MENSTRUAL HYGIENE MANAGEMENT APPROACH

Author(s): Naughton, Pena Pereira Weiss, Vargas-Ramirez | Focus: Water Supply and Sanitation

Lack of adequate menstrual hygiene management (MHM) has been coming to the forefront in the WASH sector because many girls miss school because of poor facilities and materials. This paper lays out the social, economic, and health impacts of poor MHM and how WASH initiatives can provide an entry point for building knowledge and awareness around menstruation practices.
CITIZEN ENGAGEMENT SNAPSHOT: EGYPT SUSTAINABLE RURAL SANITATION SERVICES PROGRAM FOR RESULTS

Author(s): Hamad, Ndaw, Afifi  |  Focus: Social Inclusion

The sustainable rural sanitation services program for results (SRSSP) is a results-based program aimed at improving sanitation services for more than 800,000 Egyptians in the Nile Delta. Improved service delivery and giving greater voice to citizens can enhance governance and inclusion, two focus areas in the country’s partnership framework.

WATER AND SANITATION SERVICES: ACHIEVING SUSTAINABLE OUTCOMES WITH INDIGENOUS PEOPLES IN LATIN AMERICA AND THE CARIBBEAN

Author(s): World Bank Group  |  Focus: Social Inclusion

Indigenous peoples in Latin American and the Caribbean (LAC) are 10 to 25 percent less likely to have access to piped water and 26 percent less likely to have access to improved sanitation solutions than the region’s non-indigenous population. The objective of the Toolkit is to provide practical guidance and operational tools to improve the inclusion of, engagement with, and delivery of sustainable WSS services to Indigenous peoples in LAC in order to permanently close the WSS service gap.

TOOLKIT FOR MAINSTREAMING GENDER IN WATER OPERATIONS

ALSO AVAILABLE IN FRENCH AND SPANISH

The Toolkit for Mainstreaming Gender into Water Operations was created to improve gender mainstreaming in project design, implementation and evaluation. It focuses on the roles and responsibilities of both men and women to ensure the concerns and priorities of both genders are addressed. The toolkit also provides guidance for how task teams can ensure project development objectives equally address the specific and shared interests of both women and men throughout the project cycle.
INSTITUTIONS

ALIGNING INSTITUTIONS AND INCENTIVES FOR SUSTAINABLE WATER SUPPLY AND SANITATION SERVICES

Author(s): Mumssen, Saltiel, Kingdom | Focus: Water Supply and Sanitation

An analysis of how integrated policy, institutional, and regulatory interventions can help align incentives for more sustainable water supply and sanitation service delivery.

AUSTRALIAN URBAN WATER REFORM STORY WITH DETAILED CASE STUDY ON NEW SOUTH WALES

Author(s): Salisbury, Head, Brian, Groom | Focus: Water Supply and Sanitation | Country: Australia

Urban water services in Australia are recognized as some of the most efficient utilities in the world, but this was not always the case. This study, carried out by the International Water Centre (IWC), looks at three decades of experience to draw out how national-level economic reforms in Australia helped transform the traditional state “build and supply” model into a modern service oriented and efficient sector. This work reveals insights around the interplay between state-level reform and regulation, and national framework agreements.

DESIGN, BUILD, OPERATE STANDARD BIDDING DOCUMENTS

Author(s): Water GP | Focus: Water Supply and Sanitation

This package includes a suite of standard bidding documents for Design, Build and Operate (DBO) contracts for water and wastewater treatment plants to help simplify the contracting process. It includes the initial selection document, guidance note and a standard bidding document.
KNOWLEDGE BRIEF: WHEN, WHY, AND HOW WATER AND SANITATION UTILITIES CAN BENEFIT FROM WORKING TOGETHER

Author(s): Water GP | Focus: Water Supply and Sanitation

The Global Study on WSS Utility Aggregation provides evidence-based guidance to policy makers and practitioners regarding when, why, and how water and sanitation utilities can work together, or aggregate, to successfully deliver specific policy outcomes, such as better services or lower costs. Aggregation has been regarded as an opportunity to improve cost efficiency and performance of service delivery. However, the study shows that successful aggregation is not always guaranteed.

STATUS OF WATER SECTOR REGULATION IN THE MIDDLE EAST AND NORTH AFRICA

Author(s): Mumssen, Triche | Focus: Water Supply and Sanitation | Region: MENA

This report presents an overview of the economic regulation of the water supply and sanitation sector in five countries in the Middle East and North Africa including Egypt, Iraq, Jordan, Morocco, West Bank and Gaza. It covers the institutional roles and responsibilities, tariff formulation, private sector participation, and the role of citizen engagement.

TOWARD A UNIVERSAL MEASURE OF WHAT WORKS ON RURAL WATER SUPPLY: RURAL WATER METRICS GLOBAL FRAMEWORK

Author(s): Water GP | Focus: Water Supply and Sanitation

Assessing and measuring the sustainability of rural water supply and sanitation is a difficult task because no standardized set of indicators have been created. This publication summarizes the methodology and conclusions of a study on 40 frameworks and proposes a new Rural Water Metrics Framework including 24 minimum, basic, and advanced indicators to improve data sharing and analysis.

WATER UTILITY TURNAROUND FRAMEWORK

Upcoming Publication | Author(s): Soppe | Focus: Water Supply and Sanitation

Improving the performance of water utilities is difficult because the problems that hold them back are complex and multidimensional. This Turnaround Framework provides the best practice approach to improve the efficiency and performance of water utilities and increase their ability to access to finance, including commercial finance.
### INTERNATIONAL BENCHMARKING NETWORK FOR WATER AND SANITATION UTILITIES (IBNET)

IBNET is the world’s largest database of water and sanitation tariffs and performance data. With more than 15 years of data collection, it helps service providers assess and benchmark their commercial operations, price setting and the design of tariff structures that achieve cost recovery within affordable margins. Over 5,000 utilities from hundreds of countries from around the world provide data for the Performance Database and nearly 2,000 provide data in the Tariff Database. [Http://www.ib-net.org](http://www.ib-net.org)

### SIASAR: SISTEMA DE INFORMACIÓN DE AGUA Y SANEAMIENTO RURAL

SIASAR - Sistema de Información de Agua y Saneamiento Rural - es una iniciativa conjunta iniciada por los gobiernos de Honduras, Nicaragua y Panamá cuyo objetivo estratégico es contar con una herramienta de información básica, actualizada y contrastada sobre los servicios de abastecimiento de agua y saneamiento rural existente en un país.
This toolkit is based on the findings of the new World Bank global study entitled, Joining Forces for Better Services? When, Why, and How Water and Sanitation Utilities Can Benefit from Working Together. It provides evidence-based policy advice on when aggregation is likely to be successful and how to make it successful. It draws on both qualitative and quantitative evidence and includes case studies, an interactive map, glossary, videos, literature reviews and statistical analysis.

- Report
- Aggregation global trends: interactive map and glossary
- Supporting documents
- Global case studies
**WATER SCARCE CITIES: THRIVING IN A FINITE WORLD – FULL REPORT**

Author(s): World Bank | Focus: Water Security and Integrated Resource Management

The report provides describes principles and approaches that cities and water utility decision makers can adopt to improve their cities’ resilience to water scarcity challenges. It is based on 20 case studies describing how cities have effectively and innovatively addressed emerging threats to their water supply security.

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**TURBULENT WATERS: PURSUING WATER SECURITY IN FRAGILE CONTEXTS**

Author(s): Sadoff, Borgomeo, de Waal | Focus: Water Security and Integrated Resource Management

Water insecurity can cause severe disruptions and compound fragilities in social, economic, and environmental systems. This report explores the dynamics between water insecurity and fragility and suggests that water security is more difficult to achieve in fragile contexts because of a range of factors, including weak institutions and information systems, strained human and financial resources, and degraded infrastructure.

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**BEYOND SCARCITY: WATER SECURITY IN THE MIDDLE EAST AND NORTH AFRICA**

Author(s): World Bank | Focus: Water, Poverty and the Economy Country: MENA

Achieving water security in the Middle East and North Africa requires a new way of looking at water management even beyond scarcity. This report provides a regional assessment of the challenges and opportunities in the region. It examines how the resources are currently being managed and the water-related risks that need to be recognized and mitigated.
BEYOND CROP PER DROP: ASSESSING AGRICULTURAL WATER PRODUCTIVITY AND EFFICIENCY IN A MATURING WATER ECONOMY

Author(s): Scheierling, Tréguer | Focus: Water in Agriculture

The ongoing efforts for improving agricultural water productivity and efficiency need to move beyond crop per drop approaches, because they are in many circumstances an insufficient and sometimes counterproductive attempt to adapt agricultural water management to a maturing water economy.

IMPROVING THE PERFORMANCE OF ELECTRICITY AND WATER AND SANITATION UTILITIES IN SUB-SAHARAN AFRICA

Author(s): van den Berg, Antmann, Heymans, Danilenko, Andres, Shukla, Goksu, Kingdom, Damania, Bakalian, Kamkwalala, Bahuguna, de Wit, Cubas | Focus: Water Supply and Sanitation | Region: Africa

This paper synthesizes the drivers of performance of energy and water utilities in Sub-Saharan Africa including the critical elements for turning poor-performing utilities around and providing good quality services to customers, including the poor. The utility data includes operational, financial, and commercial/customer performance.
SUSTAINABILITY

ATLAS OF SUSTAINABLE DEVELOPMENT GOALS

Author(s): World Bank

The Atlas of Sustainable Development Goals 2018 is a visual guide to the trends, challenges and measurement issues related to each of the 17 Sustainable Development Goals.

MAKING EVERY DROP COUNT: AN AGENDA FOR WATER ACTION

Author(s): High-Level Panel on Water

The United Nations and World Bank Group convened a High-Level Panel on Water to provide leadership in tackling one of the world’s most pressing challenges: an approaching global water crisis.

PROMOTING DEVELOPMENT IN SHARED RIVER BASINS: TOOLS FOR ENHANCING TRANSBOUNDARY BASIN MANAGEMENT

Author(s): Leb, Henshaw, Iqbal, Rehberger Bescos | Focus: Water Security and Integrated Resource Management

This study identifies an array of tools derived from the international experience that can be used by countries and development partners in their efforts to develop more water secure economies and societies through harnessing the shared freshwater resources of transboundary basins, while also preventing or mitigating transboundary harm that may otherwise result.
A BRIEF SUMMARY OF GLOBAL WASH INTERVENTIONS: WHAT WORKS AND WHAT DOESN’T

Author(s): Andres, Borja-Vega, Fenwick, Gomez-Suarez, De Jesus Filho

The results of a global overview and meta-analysis on the effects of different WASH interventions on different health and socioeconomic outcomes show that evaluations of WASH interventions need larger, more rigorously designed studies covering a broader scope of outcome effects.

SOLAR WATER PUMPING FOR SUSTAINABLE SUPPLY KNOWLEDGE BASE

Author(s): Welsien | Focus: Water Supply and Sanitation

To increase the availability of knowledge on solar water pumping, the World Bank has developed an easily searchable online knowledge base. It contains more than 260 resources from around the world including projects, advocacy and research documents, literature reviews, and videos covering a broad range of issues from technological change to institutional setup.
SUSTAINABILITY ASSESSMENT OF RURAL WATER SERVICE DELIVERY MODELS: FINDINGS OF A MULTI-COUNTRY REVIEW

Author(s): World Bank Group | Focus: Water Supply and Sanitation

This multi-country study identifies key challenges, good practices and policy directions to help build sector capacity and strengthen service delivery models for rural areas. It covers five building blocks of sustainability for rural water service delivery including institutional capacity, financing, asset management, water resources management, and monitoring and regulation. Country reports are available for: Bangladesh, Benin, Brazil, China, Ethiopia, Ghana, Haiti, India, Indonesia, Kyrgyz Republic, Morocco, Nepal, Nicaragua, Philippines, Tanzania, and Vietnam.

URBAN AND RURAL WSS TOOLKITS

A GUIDE TO CITYWIDE INCLUSIVE SANITATION IN WORLD BANK OPERATIONS

Upcoming Publication | Author(s): Gilsdorf, Gambrill, Kotwal | Focus: Water Supply and Sanitation

With the advent of the SDGs, the focus has shifted to safely managed sanitation services along the whole service chain – from containment at the household level through treatment and end use/safe disposal. This new objective requires us to change our approach to urban sanitation, building on lessons from successful experiences from around the world. This website follows the World Bank project cycle and provides a range of WB and external tools – guides, technical manuals, TORs, case studies, and more – to assist Task Teams and their counterparts in applying Citywide Inclusive Sanitation principles in their projects and to improve the planning, design, implementation, and maintenance of urban sanitation services.

A GUIDE TO RURAL SANITATION IN WORLD BANK OPERATIONS

Upcoming Publication | Author(s): Rand, Stip | Focus: Water Supply and Sanitation

The Water GP’s extensive knowledge base on rural sanitation is presented in a new, user-friendly format for Task Teams and their counterparts. The guide, which includes a number of clear checklists and tools, can be used for planning, designing, and implementing rural sanitation projects. It builds on years of research and application embedded in the Scaling Up Rural Sanitation (SURS) initiative.
A set of case studies was prepared as part of the World Bank’s Water Global Practice initiative “Wastewater: Shifting paradigms: from waste to resource” to document existing experiences in the water sector on the topic. The case studies highlight innovative financing and contractual arrangements, innovative regulations and legislation and innovative project designs that promote integrated planning, resource recovery and that enhance the financial and environmental sustainability of wastewater treatment plants.

**THE CASE OF ATOTONILCO DE TULA, MEXICO**

**THE CASE OF NEW CAIRO, EGYPT**

**THE CASE OF PRODES, BRAZIL**
AFRICA

WASH POOR IN A WATER-RICH COUNTRY: A DIAGNOSTIC OF WATER, SANITATION, HYGIENE, AND POVERTY IN THE DEMOCRATIC REPUBLIC OF CONGO
ALSO AVAILABLE IN SPANISH

Author(s): World Bank | Country: Democratic Republic of Congo

This diagnostic analyses trends and links them to institutional weaknesses in the WASH sector, in particular institutional fragmentation, weak capacity, and a bias toward specific institutions and services. Opportunities for improvement are analyzed and condensed into six clear messages that provide guidance on the way forward for the WASH sector in the Democratic Republic of Congo.

MAINTAINING THE MOMENTUM WHILE ADDRESSING SERVICE QUALITY AND EQUITY: A DIAGNOSTIC OF WATER SUPPLY, SANITATION, HYGIENE, AND POVERTY IN ETHIOPIA

Upcoming Publication | Country: Ethiopia

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.

HEALTH IMPACT AND EFFECTIVENESS OF DISTRIBUTION MODELS FOR PLASTIC LATRINE SLABS IN KENYA

Author(s): Water GP | Country: Kenya

Explains distribution and financing mechanisms for reaching households as well as the health impact and the effectiveness of plastic latrine slabs.
**LESOTHO WEAP MANUAL**

Author(s): Wishart, Emenajo | Country: Lesotho

This Water Evaluation and Planning (WEAP) system provides an integrated approach by linking hydrologic processes, system operations and end-use within a single analytical platform.

**FINDINGS OF THE MOZAMBIQUE WATER SUPPLY, SANITATION, AND HYGIENE POVERTY DIAGNOSTIC**

Author(s): World Bank Group | Country: Mozambique

The information presented in this comprehensive report explores water supply service quality, affordability and availability and offers conceptual framework and institutional diagnostic applied to the rural water sector, where services have been lagging behind in terms of coverage over the past decades.

**SUGGESTIONS TO IMPROVE WASH STATISTICS IN MOZAMBIQUE’S SURVEY DATA**

Author(s): Water GP | Country: Mozambique

Expounding on data gaps in the current Sustainable Development Goal (SDG) indicators, this note proposes concrete changes to improve water supply, sanitation, and hygiene (WASH) statistics in Mozambique.

**A DESTINY SHAPED BY WATER: A DIAGNOSTIC OF WATER SUPPLY, SANITATION, AND HYGIENE (WASH) AND POVERTY IN NIGER**

**Upcoming Publication | Country: Niger**

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.
A WAKE UP CALL: NIGERIA WATER SUPPLY, SANITATION, AND HYGIENE POVERTY DIAGNOSTIC

Author(s): World Bank Group | Country: Nigeria

Reviews WASH services to analyze service delivery, assess the performance of the sector and provide recommendations.

MODELING THE WATER-ENERGY NEXUS: HOW DO WATER CONSTRAINTS AFFECT ENERGY PLANNING IN SOUTH AFRICA?

Author(s): World Bank | Country: South Africa

Focuses on incorporating a representation of water supply and infrastructure costs into an energy systems model (SATIM-W) to better reflect the interdependent nature of the energy-water nexus in South Africa and the water supply challenges facing the energy system.

REVIEWING NATIONAL SANITATION TO REACH SUSTAINABLE DEVELOPMENT GOALS: UGANDA SANITATION DIAGNOSTIC STUDY REPORT

Author(s): Gibson, Eales, and Nsubuga-Mugga | Country: Uganda

This study makes a comprehensive review of the state of household and institutional sanitation in rural and urban areas, and also assesses the barriers and drivers of improvement of sanitation in the country. It defines possible measures to reach the national objectives of meeting the Sustainable Development Goals.

REACHING FOR THE SDGs: THE UNTAPPED POTENTIAL OF TANZANIA’S WATER SUPPLY, SANITATION, AND HYGIENE SECTOR

Author(s): Joseph, Haque, Ayling | Country: Tanzania

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.
**BRIEF: ZAMBIA - KALINGALINGA SANITATION PROJECT, LUSAKA**

Author(s): Water GP | Country: Zambia

Highlights lessons from citizen-focused sanitation marketing and hygiene promotion to inform and improve peri-urban services in Lusaka.

**HYDROPOWER SUSTAINABILITY ASSESSMENT PROTOCOL**

The Hydropower Sustainability Assessment Protocol is a multi-stakeholder tool that evaluates the performance of hydropower projects against globally-applicable sustainability criteria for basic good practice and proven best practice.

Country: Multi-Country; Zambezi River Basin
BRINGING CITIZEN VOICES TO NILE BASIN DEVELOPMENT

Author(s): Water GP | Country: Multi-Country

Over 500 civil society organizations are helping to strengthen the voice of communities in the development of Nile Basin resources.

COOPERATION FOR DAM SAFETY IN THE EASTERN NILE

Author(s): Water GP | Country: Multi-Country

Explains how new national dam safety units are helping countries establish national and regional safety norms.

COOPERATION IN INTERNATIONAL WATERS IN AFRICA (CIWA): OPPORTUNITIES FOR IMPACT - PARTNERSHIP FRAMEWORK

Author(s): CiWA | Country: Multi-Country

Describes the CIWA Partnership Framework and the current state of transboundary water management and development in Africa.
PERFORMANCE OF WATER UTILITIES IN AFRICA
ALSO AVAILABLE IN FRENCH

Author(s): van den Berg, Danilenko | Focus: Water Supply and Sanitation

This report assesses the drivers of utility performance of 120 African utilities in 14 countries utilizing data from the WSP-funded International Benchmarking Network for Water and Sanitation Utilities (IBNET) toolkit and database. The analysis covers operational, financial, and customer performance indicators and includes case studies of the best performing utilities.

POLITICAL ECONOMY ANALYSIS FOR TRANSBOUNDARY WATER RESOURCES MANAGEMENT IN AFRICA: PRACTICAL GUIDANCE

Author(s): Tront, Ort, Saltiel, Kamkwalala | Country: Multi-Country

Contributes to new ways of thinking and working to achieve better results around preparation and partnerships in international waters.

PRÉSERVER LES ATOUTS CÔTIERS DE L’AFRIQUE DE L’OUEST (PRESERVING THE WEST AFRICAN COASTAL ASSETS)

Author(s): Water GP | Country: Multi-Country

Cette infographie du Programme de gestion du littoral ouest Africain (West Africa Coastal Areas Management Program - WACA) présente les chiffres clés permettent de comprendre les atouts et les défis communs aux régions côtières d’Afrique de l’ouest.

STRENGTHENING INVESTMENT PLANNING TO BUILD CLIMATE RESILIENCE IN THE NIGER BASIN

Author(s): Water GP | Country: Multi-Country

Summarizes innovative approaches in nine countries for developing climate resilience-focused regional investment plans.
EAST ASIA AND PACIFIC

CHINA WATER GOVERNANCE STUDY

Upcoming Publication | Country: China

In China, 28,000 rivers have disappeared over the past 25 years. In some areas, groundwater has fallen by up to 1–3 meters a year and some 110 cities face severe water shortages. Gaps also remain in basic water services coverage while water pollution imposes serious economic, ecological, and health costs. To effectively address these complex water challenges, improved approaches to water management is needed.

THIRSTY ENERGY: MODELING THE WATER-ENERGY NEXUS IN CHINA

Author(s): World Bank Group | Country: China

To better assess the water-energy nexus challenge in China, the Thirsty Energy initiative engaged the China Institute for Water Resources (IWHR) and Hydropower Research under the auspices of the Ministry of Water Resources and the Institute of Energy, Environment, and Economy of Tsinghua University (TU) to establish a new multiregional, water-smart energy system planning model: TIMES-ChinaW.

MATURITY MATRICES FOR INSTITUTIONAL BENCHMARKING OF DAM SAFETY IN INDONESIA

Author(s): World Bank Group | Country: Indonesia

The development of Maturity Matrices for Institutional Benchmarking of Dam Safety in Indonesia provides a method for assessing the effectiveness of the operation, maintenance, surveillance and emergency preparedness programs adopted by dam authorities.
IMPROVING SERVICE LEVELS AND IMPACT ON THE POOR: A DIAGNOSTIC OF WATER SUPPLY, SANITATION, HYGIENE, AND POVERTY IN INDONESIA

Author(s): World Bank Group | Country: Indonesia

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.

BUILDING RURAL SANITATION CAPACITY NATIONWIDE IN INDONESIA

Author(s): Kasri, Setiawan, Oka, Rand, Smets | Country: Indonesia

Describes the transformative process and lessons learned from a nationwide sanitation capacity building program in Indonesia.

CASE STUDY - PDAM INTAN BANJAR

Author(s): Anwar, Salvetti | Country: Indonesia

Describes lessons learned from an aggregation reform investment program.

TIMOR-LESTE WATER SECTOR ASSESSMENT AND ROADMAP

Author(s): World Bank Group | Country: Timor-Leste

Strategic investments in the water sector and addressing water management is crucial to meet national and international development commitments and to stimulate economic growth. Potential for the development of the water resources exists in Timor-Leste, although it is constrained by limited data as well as by institutional capacity.
EUROPE AND CENTRAL ASIA

REVIEW OF ARMENIA’S EXPERIENCE WITH WATER PUBLIC-PRIVATE PARTNERSHIP

Author(s): Marin, Muzenda, Andreasyan | Country: Armenia

Four water public private partnerships (PPPs) undertaken in Armenia between 2000 and 2016 and the start of a national water lease contract that began in January 2017 are studied here.

SECURING POTABLE WATER SUPPLY UNDER EXTREME SCARCITY: LESSONS AND PERSPECTIVES FROM THE REPUBLIC OF CYPRUS

Upcoming Publication | Author(s): Marin, Charalambous, Davy | Country: Cyprus

Key achievements and lessons learned from the water management experience of the Republic of Cyprus for the benefit of other countries around the world facing increasing challenges in dealing with water scarcity, focusing on how potable water security was achieved.

CHALLENGES AND OPPORTUNITIES FOR IMPROVING HOUSEHOLD SANITATION IN THE GER AREAS OF ULAANBAATAR

Author(s): Gambrill, Leblanc | Country: Mongolia

The report identifies practicable, affordable technical options for improving household sanitation in the Ger areas of Ulaanbaatar and is aimed at assisting decision makers and other stakeholders to select the most cost-effective, feasible options for improving sanitation in the short and medium term.
**ROMANIA WATER DIAGNOSTIC REPORT: MOVING TOWARD EU COMPLIANCE, INCLUSION, AND WATER SECURITY – EXECUTIVE SUMMARY**

Author(s): World Bank Group | Country: Romania

The diagnostic report provides stakeholders, especially from the Romanian Government and the European Commission, with a comprehensive stock-taking of the situation in the Romanian water sector in 2017, 10 years after the country joined the EU.

**GLASS HALF FULL: POVERTY DIAGNOSTIC OF WATER SUPPLY, SANITATION, AND HYGIENE CONDITIONS IN TAJIKISTAN**

Author(s): World Bank | Country: Tajikistan

Documents the realities, characteristics, and priorities of Tajikistan’s WASH-deprived population. It also identifies institutional gaps and service delivery models that can inform future policies and investments in the WASH sector.

**THE COSTS OF IRRIGATION INEFFICIENCY IN TAJIKISTAN**

Author(s): Burt | Country: Tajikistan

Focuses on causes, costs, and solutions of low irrigation efficiency and the high cost of inefficiency.

**SUSTAINABLE URBAN WATER SUPPLY AND SANITATION: REACHING COMPLIANCE WITH THE EUROPEAN UNION’S WATER FRAMEWORK DIRECTIVE IN A SUSTAINABLE WAY – CHALLENGES AND OPPORTUNITIES FOR TURKEY’S WATER SUPPLY AND SANITATION SECTOR: UPDATED REPORT (TURKISH)**

Author(s): De Beauchene | Country: Turkey

Identifies and analyzes Turkey’s main obstacles and opportunities around quality, sustainability and affordability of WSS as the country works to reach compliance with the European standards.
LATIN AMERICA AND THE CARIBBEAN

INCENTIVES FOR IMPROVING WATER SUPPLY AND SANITATION SERVICE DELIVERY: A SOUTH AMERICAN PERSPECTIVE

Author(s): Uijtewaal, Goksu, Saltiel

Since 2016, the World Bank’s Water and Governance Global Practices have been implementing the Policy, Institutional and Regulatory (PIR) Incentives Initiative to gain deeper insight into the dynamics between water supply and sanitation (WSS) sector incentive mechanisms.

CITIZEN ENGAGEMENT IN WATER SNAPSHOTs: TERESINA ENHANCING MUNICIPAL GOVERNANCE AND QUALITY OF LIFE PROJECT

Author(s): Water GP | Country: Brazil

Shows how community buy-in and involvement resulted in new citizen engagement mechanisms to help expand access to sanitation, and improve water quality and access to green spaces.

PIPE(D) DREAMS: WATER SUPPLY, SANITATION, AND HYGIENE PROGRESS AND REMAINING CHALLENGES IN ECUADOR

Author(s): World Bank | Country: Ecuador

An extensive body of research assessing the extent and quality of water supply, sanitation, and hygiene (WASH) services geographically and over the income distribution. It explores the interaction between WASH outcomes and health, especially nutrition; and the institutional barriers as well as opportunities to reduce the gaps in improved access to WASH between rural and urban areas in Ecuador.

GUATEMALA’S WATER SUPPLY, SANITATION, AND HYGIENE POVERTY DIAGNOSTIC: CHALLENGES AND OPPORTUNITIES

Author(s): World Bank | Country: Guatemala

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.
LOOKING BEYOND GOVERNMENT-LED DELIVERY OF WATER SUPPLY AND SANITATION SERVICES: THE MARKET CHOICES AND PRACTICES OF HAITI’S MOST VULNERABLE PEOPLE

Author(s): World Bank | Country: Haiti

The Haiti WASH Poverty Diagnostic informs how to maximize the socioeconomic impact of the scarce fiscal resources channeled to the water sector. The study assesses the linkages between improved access to WASH services, poverty, and health outcomes.

THE CONNECTIONS BETWEEN POVERTY AND WATER SUPPLY, SANITATION, AND HYGIENE (WASH) IN PANAMA: A DIAGNOSTIC

Also available in Spanish

Author(s): World Bank | Country: Panama

This WASH Poverty Diagnostic was undertaken to increase our understanding of the linkages between monetary poverty and WASH services. Although this diagnostic covered both urban and rural areas, the main focus has been on the rural, and particularly, the indigenous areas, as these are the ones facing the greatest gaps in services.

PERÚ - CÓMO REDUCIR LA CONTAMINACIÓN Y AMPLIAR LOS SERVICIOS DE CONTROL DE LA CALIDAD AMBIENTAL

Author(s): World Bank Group | Country: Peru

El costo de la degradación ambiental en el Perú supera el 5 por ciento del PBI, afectando a los más pobres y vulnerables. El mayor impacto de la degradación ambiental está vinculado con la contaminación ambiental, que incide de manera significativa en la mortalidad y morbimidad de la población.
MIDDLE EAST AND NORTH AFRICA

THE WATER-ENERGY-FOOD NEXUS IN THE MIDDLE EAST AND NORTH AFRICA: SCENARIONS FOR A SUSTAINABLE FUTURE

Author(s): Borgomeo, Jagerskog, Talbi, Wijnen, Hejazi, Miralles-Wilhelm

Water, energy, and agriculture have been conventionally dealt with separately in investment planning. For each of these sectors, regulatory frameworks, organizations, and infrastructures have been put in place to address sector-specific challenges and demands. As the Middle East and North Africa works towards building a more sustainable future, a nexus approach that considers the risks and synergies among these sectors is needed.

BEYOND SCARCITY: WATER SECURITY IN THE MIDDLE EAST AND NORTH AFRICA

Author(s): World Bank | Focus: Water, Poverty and the Economy
Country: MENA

Achieving water security in the Middle East and North Africa requires a new way of looking at water management even beyond scarcity. This report provides a regional assessment of the challenges and opportunities in the region. It examines how the resources are currently being managed and the water-related risks that need to be recognized and mitigated.

WATER MANAGEMENT IN ISRAEL: KEY INNOVATIONS AND LESSONS LEARNED FOR WATER SCARCE COUNTRIES

Author(s): Marin, Tal, Yeres, Ringskog | Country: Israel

Illustrates the nine important lessons learned which are of major importance for other countries facing increasing water scarcity.
**WATER AND SANITATION FOR ALL IN TUNISIA: A REALISTIC OBJECTIVE**

**Upcoming Publication | Country: Tunisia**

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.

**TOWARD WATER SECURITY FOR PALESTINIANS: WEST BANK AND GAZA WASH POVERTY DIAGNOSTIC**

**Upcoming Publication | West Bank & Gaza**

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.

**CITIZEN ENGAGEMENT IN WATER SNAPSHOTS: MOROCCO OUM ER RBIA SANITATION PROJECT**

**Author(s): Water GP | Country: Morocco**

This project’s integrated approach to citizen engagement shows that keeping local communities involved in project preparation and implementation can prevent delays and improve services citizen satisfaction.

**DIRE STRAITS: THE CRISIS SURROUNDING POVERTY, CONFLICT, AND WATER IN THE REPUBLIC OF YEMEN**

**Author(s): World Bank Group | Country: Yemen**

Provides a long-term vision for providing safe WSS in Yemen along with political and institutional constraints in a post-conflict period.
MIDDLE EAST AND NORTH AFRICA

WATER SUPPLY IN A WAR ZONE: A PRELIMINARY ANALYSIS OF TWO URBAN WATER TANKER SUPPLY SYSTEMS IN THE REPUBLIC OF YEMEN

Author(s): Abu-Lohom, Konishi, Mumssen, Zabara, Moore | Country: Yemen

Even before the active conflict affecting Yemen, the water supply from public networks covered only about 50% of the population need in most urban cities. The gap in supply is being filled largely by unregulated uncontrolled private tanker trucks. While the tanker truck system plays a critical role in filling this gap, it raises serious questions with respect to affordability, health, environment, and water resources management.

THE COST OF IRRIGATION WATER IN THE JORDAN VALLEY

Author(s): van den Berg, Al Nimer | Focus: Water in Agriculture

The purpose of this study was to determine the financial cost of irrigation water in the Jordan Valley and the corresponding impact of higher water prices on farming. The analysis shows that JVA needs significant tariff increases to be able to attain a more financially sustainable footing.
PROMISING PROGRESS: A DIAGNOSTIC OF WATER SUPPLY, SANITATION, HYGIENE, AND POVERTY IN BANGLADESH

Country: **Bangladesh**

A snapshot of the quality and inequality of WASH access in Bangladesh, with statistics from numerous dataset. This report also attempts to show the implications of these numbers on human development and poverty reduction.

MAINSTREAMING CITIZEN FEEDBACK ON SERVICE DELIVERY USING ICTS: FINDINGS AND LESSONS FROM ICT-BASED FEEDBACK SURVEYS ON WATER SUPPLY AND SANITATION SERVICES IN INDIAN CITIES

Author(s): **Bhatnagar, Batra, Tiwari** | Country: **India**

This report presents the results from implementation of Service Level Benchmarks (SLBs) to strengthen service delivery in India.

RAJASTHAN WATER ASSESSMENT: POTENTIAL FOR PRIVATE SECTOR INTERVENTIONS

Author(s): **Hooda** | Country: **India**

Provides an in-depth and comprehensive overview of the challenges of drinking water supply, water quality, and agriculture-water in Rajasthan with a focus on potential private sector engagements.

SLB CONNECT FOR URBAN WATER SUPPLY AND SANITATION: USING ICTS FOR CITIZEN FEEDBACK SURVEYS TO MAINSTREAM DEMAND-SIDE MONITORING

Author(s): **Bhatnagar, Wright** | Country: **India**

Shows how Service Level Benchmarking programs leverage the use of information and communication technologies (ICTs) for collecting customer feedback to improve service outcomes.
SO

TH ASIA

WASH POVERTY DIAGNOSTIC

Upcoming Publication | Country: India

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.

WHEN WATER BECOMES A HAZARD: A DIAGNOSTIC REPORT ON THE STATE OF WATER SUPPLY, SANITATION, AND POVERTY IN PAKISTAN AND ITS IMPACT ON CHILD STUNTING

Upcoming Publication | Country: Pakistan

The WASH Poverty Diagnostic Initiative captures and analyzes data from 18 countries to present evidence on inequalities in access to WASH services, examine the impact of unequal service on the poor, and explore why service delivery continues to be inadequate and inefficient in much of the world.
Through its dam safety program, the Nile Basin Initiative’s Eastern Nile Technical Regional Office (ENTRO) works with Eastern Nile countries to build technical capacity and establish national and regional safety norms. Technical Regional Office (ENTRO) is setting up national dam safety units so countries can standardize dam safety management, safeguarding against such threats as overdevelopment, lack of maintenance, and natural disasters. Additionally, the collaboration among countries in the dam safety program can help avert potential disasters in the region. As part of the proposed guidelines and ensure that sustainability of dams, ENTRO is building technical capacity in the region.

Key insights about the dam safety program:

- Flexibility in design and operation. Social, environmental, and economic sustainability of dams. Flexibility in design and operation to enhance existing dam planning and operational safety in the Eastern Nile rivers.
- Improved dam safety practices can boost infrastructure sustainability and reduce marginal additional cost. With recognition of the importance of shared rights and responsibilities in the Eastern Nile rivers, improved dam safety practices can help meet all or most of the estimated 48,000 GWh/year demand of the region’s rich natural endowments. Despite this increasing prosperity, however, poverty is persistent across the basin and coefficients of mutual dependencies among different users within a sustainable range of seven dam-safety workshops and CIWA-supported capacity building activities, tools, and options and operating rules helps ensure that the guidelines' safety recommendations are developed in large infrastructure co-exist alongside a parallel, subsistence infrastructure.
- Effectiveness of Distribution. In partnership: Hidroeléctrica de Cahora Bassa

ZAMBEZI

In partnership:

Cahora Bassa North Bank

Turbulent Waters

Beyond Crop per Drop

Innovations in WASH Impact Measures

World Bank Group

Beyond Crop per Drop

Innovations in WASH Impact Measures

World Bank Group

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