

The most comprehensive undertaking to date of monitoring and assessment of the planet's freshwater by the United Nations, in partnership with governments and other entities.



'...shows the United Nations at work, helping the world to confront current and impending water crises.

I recommend this publication to the widest possible audience.'

Kofi Annan - on the 2003 Report *'Water for People - Water for Life'*

Water

a shared responsibility

The United Nations
World Water Development
Report 2



World Water
Assessment Programme

www.unesco.org/water/wwap

UN WATER



WATER, A SHARED RESPONSIBILITY

Contents:

Foreword: **Kofi Annan**, *UN Secretary General*

Prologue: **Koïchiro Matsuura**
UNESCO Director General

Preface: **Gordon Young**, *WWAP Coordinator*

PART I : CHANGING CONTEXTS

CHAPTER 1: Living in a Changing World

Emphasizing the central role of water use and allocation in poverty alleviation and socio-economic development, this chapter discusses some of the many ways in which demographic and technological change, globalization and trade, climate variability, HIV/AIDS, warfare, etc., affect and are impacted by water. Key concepts of water management, sustainability and equity are introduced, as is the pivotal role of the many activities of the UN system in the water sector.

CHAPTER 2: The Challenges of Governance *UNDP, with IFAD & UN-ECE*

Recognizing that the water crisis is largely a crisis of governance, this chapter outlines many of the leading obstacles to sound and sustainable water management: sector fragmentation, poverty, corruption, stagnated budgets, declining levels of development assistance and investment in the water sector, inadequate institutions and limited stakeholder participation. While the progress towards reforming water governance remains slow, this chapter provides recommendations for balancing the social, economic, political and environmental dimensions of water.

CHAPTER 3: Water and Human Settlements in an Urbanizing World - *UN-HABITAT*

Increasing population growth is creating major problems worldwide. Growing urban water supply and sanitation needs, particularly in lower- and middle-income countries, face increasing competition with other sectors. Rising incomes in other portions of the world population fuel demand for manufactured goods and environmental services and amenities, all of which require water. This chapter emphasizes the scale of the growing urban water challenges, pointing out that nearly one-third of urban dwellers worldwide live in slums.

CHAPTER 4: The State of the Resource *UNESCO & WMO, with IAEA*

This chapter reviews the main components of the water cycle and provides an overview of the geographical distribution of the world's total water resources, their variability, the impacts of climate change and the challenges associated with assessing the resource.

CHAPTER 5: Coastal and Freshwater Ecosystems - *UNEP*

Natural ecosystems, rich in biodiversity, play a critical role in the water cycle and must be preserved. In many areas, a variety of pressures on freshwater ecosystems are leading to their rapid deterioration, affecting livelihoods, human well-being and development. To reverse this trend, protecting ecosystems and biodiversity must become a fundamental component of Integrated Water Resources Management (IWRM).

PART II: CHALLENGES FOR HUMAN WELL-BEING AND DEVELOPMENT

CHAPTER 6: Protecting and Promoting Human Health - *WHO & UNICEF*

The state of human health is inextricably linked to a range of water-related conditions: safe drinking water, adequate sanitation, minimized burden of water-related disease and healthy freshwater ecosystems. Urgent improvements in the way in which water use and sanitation are managed are necessary for improving progress towards meeting the MDGs related to human health.

CHAPTER 7: Water for Food, Agriculture and Rural Livelihoods - *FAO & IFAD*

The daily demand for food is not negotiable. As the largest consumer of freshwater, the agriculture sector faces a critical challenge: producing more food of better quality while using less water per unit of output, in order to help protect the complex aquatic ecosystems on which our survival depends. This chapter examines the challenges of feeding a growing population and balancing its water needs with other uses in a sustainable way. Water opens the pathways and empowers the livelihoods approach to poverty reduction.

CHAPTER 8: Water and Industry - *UNIDO*

Despite industry's need for clean water, industrial pollution is damaging and destroying freshwater ecosystems in many areas, compromising water security for both individual consumers and industries. This chapter focuses on industry's impact on the water environment through its routine water withdrawal and wastewater discharge, analysing a broad range of regulatory instruments and voluntary initiatives that could improve water productivity, industrial profitability and environmental protection.

CHAPTER 9: Water and Energy - *UNIDO*

To be sustainable, economic development needs an adequate and steady supply of energy. Today's changing contexts require the consideration of a range of strategies to incorporate hydropower generation and other renewable forms of energy production to improve energy security while minimizing climate-changing emissions. This chapter stresses the need for the cooperative management of the energy and water sectors to ensure sustainable and sufficient supply of both energy and water.

PART III: MANAGEMENT RESPONSES AND STEWARDSHIP

CHAPTER 10: Managing Risks: Securing the Gains of Development - *WMO, ISDR, UNU*

The climate is changing, thus increasing the occurrence and intensity of water-related natural disasters and creating greater burdens on human and environmental development. Employing an integrated approach, this chapter explores some of the ways of better reducing human vulnerabilities and examines the recent developments in risk reduction strategies.

CHAPTER 11: Sharing Water - *UNESCO*

Increasing competition for water resources can have potentially divisive effects. Mechanisms for cooperation and shared governance among users must be further developed in order to ensure that the resource become a catalyst for cooperation and a medium for deterring political tensions, while encouraging equitable and sustainable development.

CHAPTER 12: Valuing and Charging for Water *UN-DESA*

Water has a range of values that must be recognized in selecting governance strategies. Valuation techniques inform decision-making for water allocation, which promote not only sustainable social, environmental and economic development but also transparency and accountability in governance. This chapter reviews techniques of economic valuation and the use of these tools in water policy development and charging for water services.

CHAPTER 13: Enhancing Knowledge and Capacity - *UNESCO*

The collection, dissemination and exchange of water-related data, information and know-how are imbalanced and, in many cases, deteriorating. It is now more urgent than ever to improve the state of knowledge concerning water-related issues through an effective global network of research, training and data collection and by implementing more adaptive, informed, and participatory approaches at all levels.

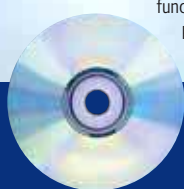
PART IV: SHARING RESPONSIBILITIES

CHAPTER 14: Case Studies: Moving Towards an Integrated Approach

These 17 Case Studies from around the world examine typical water resource challenges and provide valuable on-the-ground insights into the facets of the water crisis and different management responses: **The Autonomous Community of the Basque Country** (Spain), **China** (Heihe Basin), **Danube River Basin** (Albania, Austria, Bosnia-Herzegovina, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, the Former Yugoslav Republic of Macedonia, Moldova, Poland, Romania, Serbia and Montenegro, the Slovak Republic, Slovenia, Switzerland, Ukraine, Romania, Slovak Republic, Slovenia), **Ethiopia**, **France**, **Japan**, **Kenya**, **Lake Peipsi** (Estonia, Russian Federation), **Lake Titicaca** (Bolivia, Peru), **Mali**, **the State of Mexico**, **Mongolia** (Tuul Basin), **La Plata Basin** (Argentina, Brazil, Bolivia, Paraguay, Uruguay), **South Africa**, **Sri Lanka**, **Thailand**, **Uganda**.

CHAPTER 15: Conclusions and Recommendations for Action

Drawing on the essential points and key messages presented throughout the Report, this chapter weaves together a set of conclusions and recommendations to guide future action and enhance the sustainable use, productivity and management of the world's increasingly scarce freshwater resources.



CD-ROM - The accompanying interactive, searchable and hyperlinked CD-ROM includes all of the WWDR2 data tables, graphs, charts and maps, as well as detailed sections on indicator and case study developments, among other valuable materials, all of which are available as of 22 March 2006 (World Water Day) at www.unesco.org/water/wwap

Water a shared responsibility

The United Nations World Water Development Report 2 (WWDR 2)

For some, the water crisis means having to walk long distances every day to fetch enough drinking water – clean or unclean – just to get by. For others, it means suffering from avoidable malnutrition or disease caused by drought, flood or inadequate sanitation. Still others experience it as a lack of funds, institutions or knowledge to solve local problems of water use and allocation.

Many countries are still not on track to reach the water-related targets of the Millennium Development Goals (MDGs) – threatening their security, development and environmental sustainability – and millions of people die each year from treatable water-borne diseases. While water pollution and the destruction of ecosystems increase, we are witnessing the consequences that climate change, natural disasters, poverty, warfare, globalization, population growth, urbanization and disease – all of which impinge on the water sector – have on so many of the people of the world.

It is widely accepted that sustainable and equitable water management must be undertaken using an integrated approach, that assessment of the resource is the basis for rational decision-making, and that national capacities to undertake such assessments must be further supported and expanded at local through international levels. It is therefore paramount to provide the best possible understanding of the state of the world's freshwater resources to the world at large.

The triennial World Water Development Report (WWDR) lays the foundation for a continuous, global monitoring system and shows the United Nations system at work, pooling the unique perspectives and expertise of the 24 UN agencies that comprise UN-Water, in partnership with governments and other entities concerned with freshwater issues.

Water, a Shared Responsibility (March 2006) is the main outcome of Phase 2 of the World Water Assessment Programme (WWAP), founded in 2000 as a collective response of the UN system to assist countries in reaching their commitments in key water-related challenge areas. WWDR 2 offers a comprehensive and holistic assessment of the world's water, while bringing the issues of water governance, knowledge accessibility and the specific challenges of managing water into the mainstream of development thinking and practices, across all the major intersections of water, human well-being and development.

Bearing in mind users needs, the 2006 Report aims to be practical in orientation, offers best practices as well as in-depth theoretical and analytic analyses to help stimulate ideas and actions for better stewardship in the water sector. The use of hundreds of maps, tables, figures, boxed examples, indicators and case studies illustrate that only our global cooperation will help to ensure an integrated, equitable and sustainable management of the world's most precious resource – water.



Survey: A call to readers worldwide

In order to better orient our production of WWDR3, we welcome and urge you to take a few minutes to respond to our survey. Your comments on all aspects of the Report will be especially helpful to us. Please detach the questionnaire and mail or fax (see over), whether or not you are ordering.

Name:

Organization:

Address:

Telephone: **Email:**

Age group < 18 18-30 30-60 > 60 **Gender** Female Male

What is the highest level of schooling you have completed?

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| <input type="checkbox"/> Primary school | <input type="checkbox"/> Undergraduate degree | <input type="checkbox"/> Doctoral degree |
| <input type="checkbox"/> High school | <input type="checkbox"/> Professional degree | |
| <input type="checkbox"/> Technical degree | <input type="checkbox"/> Master's degree | |

What is your principal professional sector/activity? (Please tick all relevant)

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| <input type="checkbox"/> Agriculture/food | <input type="checkbox"/> Healthcare/pharmaceutical | <input type="checkbox"/> Research/academic |
| <input type="checkbox"/> Communication | <input type="checkbox"/> Insurance | <input type="checkbox"/> Student |
| <input type="checkbox"/> Construction/engineering | <input type="checkbox"/> Land & maritime transport | <input type="checkbox"/> Tourism/coastal management |
| <input type="checkbox"/> Consultancy | <input type="checkbox"/> Legal affairs | <input type="checkbox"/> Trade/distribution |
| <input type="checkbox"/> Education/teaching | <input type="checkbox"/> Management | <input type="checkbox"/> Urban & rural development |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Media/publishing | <input type="checkbox"/> Water resource management/sanitation |
| <input type="checkbox"/> Environmental | <input type="checkbox"/> Military | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Fishing & aquaculture | <input type="checkbox"/> Natural science/research | |
| <input type="checkbox"/> Financial/banking/economics | <input type="checkbox"/> Social science | |

Which of the following best describes your work setting?

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| <input type="checkbox"/> Institute | <input type="checkbox"/> National government | <input type="checkbox"/> University |
| <input type="checkbox"/> Inter-governmental organization | <input type="checkbox"/> Non-governmental organization | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Library | <input type="checkbox"/> Non-profit | |
| <input type="checkbox"/> Local government | <input type="checkbox"/> Private company | |

Which edition of the World Water Development Report (WWDR) do you have access to or have read?

- WWDR 1: *Water for People, Water for Life* (2003) Have access to Read Web version Print version
- WWDR 2: *Water, a Shared Responsibility* (2006) Have access to Read Web version Print version

Which challenge areas of the World Water Development Report are you most interested in? (Please tick all relevant)

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| <input type="checkbox"/> Water and governance | <input type="checkbox"/> Water and health | <input type="checkbox"/> Managing risks |
| <input type="checkbox"/> Water and human settlements | <input type="checkbox"/> Water and food | <input type="checkbox"/> Sharing water |
| <input type="checkbox"/> The state of resource | <input type="checkbox"/> Water and industry | <input type="checkbox"/> Valuing water |
| <input type="checkbox"/> Water and ecosystems | <input type="checkbox"/> Water and energy | <input type="checkbox"/> Case studies |

Please comment freely on the Report as a whole. Do you have any suggestions for future Reports?

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How did you first learn about the World Water Development Report? (Please tick all relevant)

- | | | |
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| <input type="checkbox"/> Bookshop | <input type="checkbox"/> Press article (please specify) | <input type="checkbox"/> WWAP Brochure |
| <input type="checkbox"/> Forum/expo (please specify) | | <input type="checkbox"/> WWAP newsletter |
| | <input type="checkbox"/> Press release | <input type="checkbox"/> WWAP Website |
| <input type="checkbox"/> Internet search engine | <input type="checkbox"/> Research | <input type="checkbox"/> WWDR Brochure |
| <input type="checkbox"/> Literature reference | <input type="checkbox"/> Workshop/conference (please specify) | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Personal referral | | |

How did you get a copy of the World Water Development Report?

- Gift Library Loan Professional reference copy Purchase Web version

Which language edition of the Report would be most useful to you?

- Arabic Chinese English French Spanish Russian Other

Which format of the Report is the most useful for you? Book CD-ROM Online version (PDF)

How many people share or will share your copies of the Report? 1-3 4-6 7-10 10

Which related websites have you visited?

- UNESCO - www.unesco.org UNESCO Water Portal - www.unesco.org/water WWAP - www.unesco.org/water/wwap
- Another UN organization (please specify) None of the above

THANK YOU FOR YOUR TIME.



Water

a shared responsibility

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A joint undertaking of the 24 UN agencies comprising UN-Water, and in partnership with governments and other entities concerned with freshwater issues, this volume, covering as it does all regions and most countries of the world, provides an up-to-date global overview of the state and uses of freshwater, critical water-related problems and societies' coping mechanisms. Drawing on an extensive database, expert analysis, case studies, and hundreds of graphic elements, it is the most comprehensive undertaking to date of freshwater assessment, providing a mechanism for monitoring changes in the resource and its management and progress towards achieving development targets, particularly the Millennium Development Goals.



Building on the conclusions of the first World Water Development Report, *Water for People, Water for Life* (2003), the 2006 Report confirms the ongoing, serious and growing water crisis – to a large extent a crisis of governance – and points to a prevalent lack of capacity and knowledge base as today's primary obstacles to achieving the necessary levels of water governance. This volume proposes a more integrated vision of water resources management to respond to changing environmental and socio-economic conditions.



The accompanying interactive, searchable and hyperlinked CD-ROM includes all of the WWDR2 data tables, graphs, charts and maps, as well as detailed sections on indicator and case study developments, among other valuable materials, all of which are available on the WWAP website as of 22 March 2006 at www.unesco.org/water/wwap.



WWDR2 is aimed at a wide audience, including all those interested or directly involved in the formulation and implementation of water-related policies, as well as managers, researchers, teachers, students and, of course, water users themselves.



Including **UNDESA, UNECE, UNESCAP, UNECA, UNECLAC, UNESCWA**

