

**UNESCO**

**Natural Sciences**

**Catalogue of Publications**

**2014-2015**



## Table of Contents

Water Sciences .....	1
World Water Assessment Programme .....	3
Marines Sciences .....	5
Ecological and Earth Sciences .....	6
Disaster Risk Reduction .....	7
Small islands and Indigenous knowledge .....	8
Basic Sciences and Engineering .....	9
Science Policy, Technology and Innovation .....	10

## Water Sciences



### Science diplomacy and transboundary water management: The Orontes River case

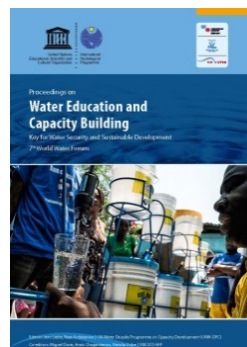
ISBN: 978-92-3-000017-2

Published in 2015 by UNESCO, Paris and BRESCE, Venice  
224 p., illus., maps, ENG and ARB

The Orontes River is a transboundary river shared between Lebanon, Syria and Turkey. It is a sensitive resource for the future water security of the three riparian countries sharing its waters, especially given the current critical situation. This book analyzes the concept of an integrated and sustainable management of the waters of the Orontes River through contributions of the experts in the fields of hydro-diplomacy, negotiation, water law, water policy, GIS and water resources. The

publication intends to raise awareness, show the importance of an integrated approach for a sustainable water resource management and propose tools and methodologies to foster discussion and improve diplomacy in this sensitive field.

<http://unesdoc.unesco.org/images/0023/002330/233031M.pdf>



### Water Education and Capacity-building

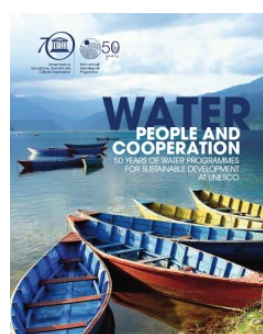
SC/HYD/2015

41 p., illus., ENG

Published in 2015 by UNESCO-IHP and UNW-DPC

Proceedings on Water Education and Capacity-building: Key for Water Security and Sustainable Development, 7<sup>th</sup> World Water Forum, Daegu-Gyeongju, Korea.

<http://unesdoc.unesco.org/images/0023/002335/233579E.pdf>



### Water, People and Cooperation

*50 years of water programmes for sustainable development at UNESCO*

ISBN: 978-92-3-100128-4 (ENG), 978-92-3-200077-4 (FR), 978-92-3-300028-5 (SP)

Published in 2015 by UNESCO

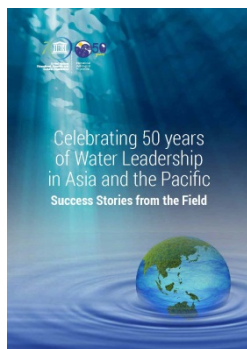
UNESCO is proudly celebrating its 70th anniversary as well as the 50th anniversary of its water programmes. The International Hydrological Programme (IHP) is the only intergovernmental programme of the UN system devoted to water research, water resources management, and education and capacity development. This volume constitutes the reference document on this historical jubilee of UNESCO

and the IHP. It will tell the story and past achievements of the cooperation, and will present options for the desired future of IHP.

<http://unesdoc.unesco.org/images/0023/002350/235002e.pdf> (ENG)

<http://unesdoc.unesco.org/images/0023/002350/235081f.pdf> (FR)

<http://unesdoc.unesco.org/images/0023/002350/235029s.pdf> (SP)



**Celebrating 50 years of Water Leadership in Asia and the Pacific**

*Success Stories from the Field*

ISBN: 978-602-9416-12-1

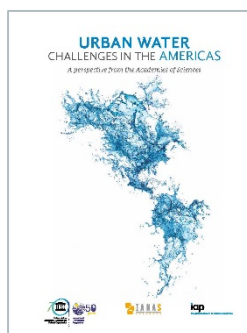
77 p., illus., ENG

Published in 2015 by UNESCO, Jakarta

2015 is a special year for the UNESCO Water Family as it marks the 50th anniversary of the water programmes in UNESCO. The Asia-Pacific region, with its numerous water security challenges, has played a significant role in implementing programmes initiated by UNESCO through the International Hydrology Decade (IHD) (1965–1974) and, most of all, through the International Hydrology Programmes (IHP) (since 1975). This document provides an overview of the previous and present

achievements, discusses future challenges, and highlights efficient and effective ways to address these matters within the scope of UNESCO's Water Programmes.

<http://unesdoc.unesco.org/images/0023/002350/235022e.pdf>



**Urban Water Challenges in the Americas**

*A perspective from the Academies of Sciences*

ISBN: 978-607-8379-12-5

638 p., illus., ENG, SP

Co-published by UNESCO and IANAS, 2015

<http://unesdoc.unesco.org/images/0024/002464/246414e.pdf>

<http://unesdoc.unesco.org/images/0024/002452/245202s.pdf>



**Водопользование в Узбекистане: традиции и современность  
(Uzbekistan: traditional and modern practices of water use and management)**

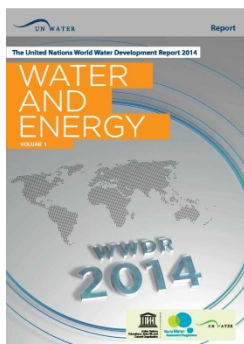
ISBN: 978-92-3-400005-5 (Russian)

978-92-3-000019-6 (Uzbek)

108 p., illus.

Published by UNESCO Tashkent, 2015

## World Water Assessment Programme



### Water and Energy

*The United Nations World Water Development Report-2014 (Set of 2 volumes)*

ISBN: 978-92-3-104259-1

Published in 2014 by UNESCO

224 p., boxes, tables, figures and bibliography, ENG

Water and energy are closely interconnected and highly interdependent. Trade-offs need to be managed to limit negative impacts and foster opportunities for synergy. Water and energy have crucial impacts on poverty alleviation both directly, as a number of the Millennium Development Goals depend on major improvements in access to water, sanitation, power and energy sources, and indirectly, as water and energy can be binding constraints on economic growth – the ultimate hope for

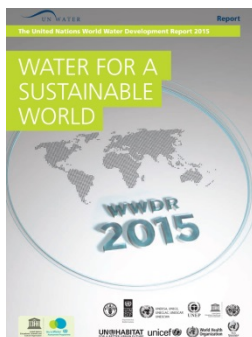
widespread poverty reduction. This fifth edition of the United Nations World Water Development Report (WWDR 2014) seeks to inform decision-makers (inside and outside the water and energy domains), stakeholders and practitioners about the interlinkages, potential synergies and tradeoffs, and to highlight the need for appropriate responses and regulatory frameworks that account for both water and energy priorities.

To order a printed copy: [http://publishing.unesco.org/details.aspx?=&Code\\_Livre=5024&change=E](http://publishing.unesco.org/details.aspx?=&Code_Livre=5024&change=E)

To download: <http://unesdoc.unesco.org/images/0022/002257/225741e.pdf>

**Executive summary in French** <http://unesdoc.unesco.org/images/0022/002269/226962f.pdf>

**Executive summary in Spanish** <http://unesdoc.unesco.org/images/0022/002269/226962s.pdf>



### Water for a Sustainable World

*The United Nations World Water Development Report-2015 (Set of 2 volumes)*

ISBN: 978-92-3-100080-5 (set); 978-92-3-100071-3

Published in 2015 by UNESCO

122 p., illus., maps, ENG

The WWDR 2015 demonstrates how water resources and services are essential to achieving global sustainability. Taking account of economic growth, social equity and environmental sustainability, the report's forward-looking narrative describes how major challenges and change factors in the modern world will affect – and can be affected by – water resources, services and related benefits. The report provides a comprehensive overview of major and emerging trends from around the world,

with examples of how some of the trend-related challenges have been addressed, their implications for policy-makers, and further actions that can be taken by stakeholders and the international community.

To order a printed copy: [http://publishing.unesco.org/details.aspx?&Code\\_Livre=5076&change=E](http://publishing.unesco.org/details.aspx?&Code_Livre=5076&change=E)

To download: **Report** <http://unesdoc.unesco.org/images/0023/002318/231823E.pdf>

**Case studies** <http://unesdoc.unesco.org/images/0023/002321/232179E.pdf>

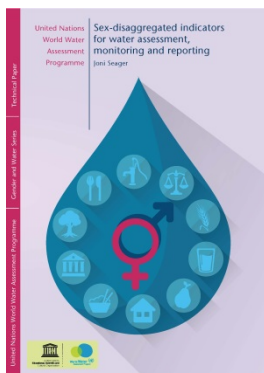
**Executive summary in French** <http://unesdoc.unesco.org/images/0023/002322/232272f.pdf>

**Executive summary in Spanish** <http://unesdoc.unesco.org/images/0023/002322/232272s.pdf>

**Executive summary in Chinese** <http://unesdoc.unesco.org/images/0023/002322/232272c.pdf>

**Executive summary in Russian** <http://unesdoc.unesco.org/images/0023/002322/232272r.pdf>

**Executive summary in Arabic** <http://unesdoc.unesco.org/images/0023/002322/232272a.pdf>



**Sex-disaggregated indicators for water assessment, monitoring and reporting**

ISBN: 978-92-3-100119-2  
 Published in 2015 by UNESCO  
 ENG, FR, SP

In this technical paper WWAP provides a priority set of gender-sensitive indicators and related methodology, which, together with a guideline on how to collect sex-disaggregated data and a questionnaire for field inquiry, form the complete toolkit produced under the project 'Gender Sensitive Water Monitoring Assessment and Reporting'.

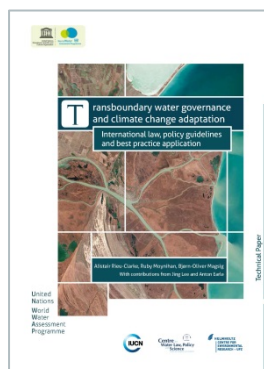
- <http://unesdoc.unesco.org/images/0023/002340/234082e.pdf> (ENG)
- <http://unesdoc.unesco.org/images/0023/002353/235363f.pdf> (FR)
- <http://unesdoc.unesco.org/images/0023/002353/235364s.pdf> (SP)

**Guidelines on how to collect sex-disaggregated water data**

<http://unesdoc.unesco.org/images/0023/002345/234513E.pdf>

**Questionnaire for collecting sex-disaggregated water data**

<http://unesdoc.unesco.org/images/0023/002345/234514E.pdf>



**Transboundary water governance and climate change adaptation**

*International law, policy guidelines and best practice application*

ISBN: 978-92-3-100135-2  
 Published in 2015 by UNESCO  
 ENG

This publication, produced in close collaboration with IUCN Environmental Law Center, University of Dundee IHP-HELP Centre for Water Law, Policy and Science and Helmholtz Centre for Environmental Research explores the role of water governance in a transboundary context, in a way that identifies best practice examples of effective policy guidelines, and ascertains the contribution that international law can make.

<http://unesdoc.unesco.org/images/0023/002356/235678e.pdf>

## Marines Sciences



### **Ocean Sustainability in the 21st Century**

Edited by Salvatore Aricò

ISBN: 978-92-3-100055-3

Co-published in 2015 by UNESCO Publishing and Cambridge University Press

324 p., tables, figures, boxes, notes, references, index, ENG

The world's oceans are an essential source of food and other resources, as well as providing an important means of transportation, trade, and recreation. Covering more than two thirds of the Earth's surface, our oceans are intricately linked to our climate system and require careful management to ensure their continued sustainability. Describing the emerging and unresolved issues related to the oceans and the marine environment, this book presents the developments made in marine science and policy since the implementation of the United Nations Convention on the Law of the Sea (UNCLOS), and implications for the sustainable management of ocean areas and resources. This comprehensive volume also provides a number of scientific, policy, and legal tools to address such issues, and to ensure better science-based management of the oceans. Topics covered include the impacts of human-induced climate change on the oceans, the marine genetic resources debate, the current legal framework for the oceans, and a comparative study of the legal issues associated with outer space. Including practical examples and worldwide case studies, this book is a valuable resource for policy makers, students, and academics, in marine science and policy, ocean affairs, and the law of the sea.

To order: [http://publishing.unesco.org/details.aspx?&Code\\_Livre=5058&change=E](http://publishing.unesco.org/details.aspx?&Code_Livre=5058&change=E)

## Ecological and Earth Sciences



### **Innovative Ways for a Sustainable Use of Drylands**

*Final Report of the SUMAMAD Project*

Published by UNESCO, 2014

186 p., illus., maps, bibl., ENG

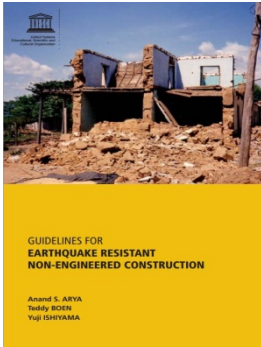
ISBN: 978-92-3-001206-9

This publication synthesizes the results of the second phase of the Sustainable Management of Marginal Drylands project funded by the Flemish Government of Belgium. Scientists from ten countries – Belgium, Bolivia, Burkina Faso, China, Egypt, India, the Islamic Republic of Iran, Jordan, Pakistan and Tunisia – studied dryland ecosystems from a research, environmental conservation and sustainable development perspective. Their objective was to elaborate wise dryland management practices by involving local communities while satisfying their needs for sustainable livelihoods. Studied sites included field research stations and biosphere reserves, which also served as testing grounds for alternative income opportunities among dryland communities based on their perceived needs and priorities. It is hoped that the knowledge gleaned from the individual project sites will also benefit dryland regions in other parts of the world.

<http://unesdoc.unesco.org/images/0022/002279/227981e.pdf>



## Disaster Risk Reduction



### **Guidelines for Earthquake Resistant Non-Engineered Construction**

Authors: Arya, Anand S.; Boen, Teddy; Ishiyama, Yuji

Published by UNESCO, 2014

ISBN: 978-92-3-000032-5

199 p., illus., plans, ENG

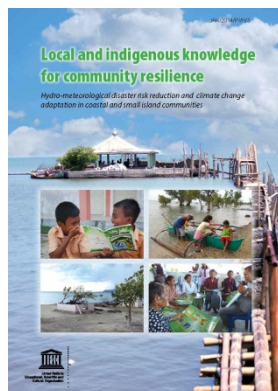
The non-engineered buildings are those which are spontaneously and informally constructed in various countries in the traditional manner without any or little intervention by qualified architects and engineers in their design.

This publication aims at explaining the lessons learned from the seismic performance of such buildings during past earthquakes and the basic concepts involved in their aseismic design and construction, restoration and strengthening,

and laying down guidelines for their safe planning and construction.

<http://unesdoc.unesco.org/images/0022/002290/229059E.pdf>

## Small islands and Indigenous knowledge



### Local and Indigenous Knowledge for Community Resilience

ISBN: 978-602-9416-11-4

Published in 2014 by UNESCO

60 pp., ENG

This publication introduces the results of the research activities implemented on local and indigenous knowledge related to hydro-meteorological hazards and climate change in Indonesia, the Philippines and Timor-Leste between 2011-2013.

<http://unesdoc.unesco.org/images/0022/002287/228711E.pdf>



### Understanding Community Perceptions about Climate Change in the Pacific

SPARCK project final report

Published by UNESCO in 2014

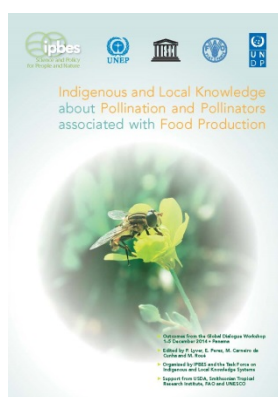
TH/DOC/APIA/14/017

86 p., illus., ENG

The Sharing of Perceptions of Adaptation and Climate Knowledge project (SPARCK) was developed to examine understanding of climate change risk perceptions in Pacific communities. The project aimed to evaluate community perceptions of climate change and identify opportunities for activities to increase resilience and mitigate the impact of climate change. The SPARCK project explored key questions relating to perceptions about the teaching of climate change, how information about climate change was communicated at the

community level, what communities perceived to be the greatest challenges in addressing climate change and the actions they proposed for managing the impacts of climate change.

<http://unesdoc.unesco.org/images/0023/002305/230529e.pdf>



### Indigenous Knowledge about Pollination and Pollinators associated with Food Production

Outcomes from the Global Dialogue Workshop, Panama 1–5 December 2014

Published in 2015 by UNESCO

SC-2015/WS/13

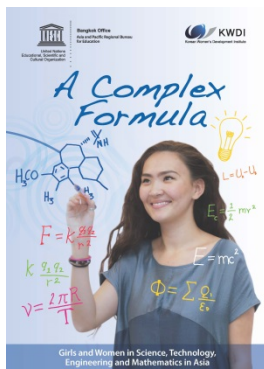
106 p., illus., incl. bibl., ENG

The Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES) and its Task Force on indigenous and local knowledge systems (ILK) present a series of case studies based on indigenous and local knowledge from Brazil, France, Guatemala, Indonesia, Kenya, New Zealand and Panama. This report by the ILK Task Force on the Global Dialogue Workshop (Panama, 1-4 December 2014) and its follow-up has two objectives: 1) to assist the co-chairs, coordinating lead authors and lead authors of the IPBES Pollination Assessment by facilitating

their access to indigenous and local knowledge relevant to the assessment theme; 2) to pilot the initial approaches and procedures for building ILK into IPBES assessments that are under development by the ILK task force in order to test their efficacy and improve the final ILK approaches and procedures that the task force will propose to the next meeting of the Plenary of IPBES in 2016.

<http://unesdoc.unesco.org/images/0023/002338/233811e.pdf>

## Basic Sciences and Engineering



### **A Complex Formula: Girls and Women in Science, Technology, Engineering and Mathematics in Asia**

Published by UNESCO Bangkok in 2015

ISBN: 978-92-9223-503-1 (print)

ISBN: 978-92-9223-492-8 (electronic)

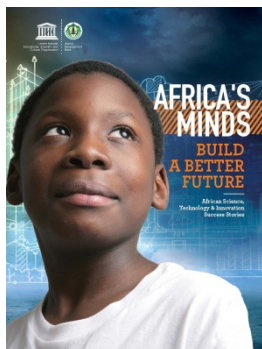
122 p., illus., incl. bibl, ENG

The report *A Complex Formula: Girls and Women in Science, Technology, Engineering and Mathematics in Asia*, answers three fundamental questions:

Where do we stand? What led us here? Where to go from here? It examines a wide range of issues from gender differences in learning achievement in mathematics and science, participation in higher education as well as educational, psychosocial and labour market factors, all of which can influence girls' and women's attitudes towards STEM fields as a choice for further study and as a career.

<http://unesdoc.unesco.org/images/0023/002315/231519e.pdf>

## Science Policy, Technology and Innovation



### **Africa's Minds Build a Better Future**

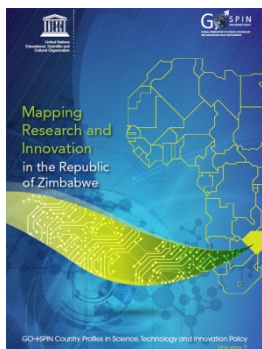
*African Science, Technology and Innovation Success Stories*

Published in 2014 by UNESCO and the IsDB  
29 p., illus., ENG, FRE

It is widely recognized that STI are essential for sustainable economic development. Evidence shows that investing in scientific knowledge and new forms of innovation are powerful contributors to inclusive growth. Over the past decade, many science and technology projects in Africa have been initiated with great success and creative innovation. This booklet showcases 11 often untold stories of how local communities across Africa are reaping the rewards of innovation.

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<http://unesdoc.unesco.org/images/0022/002278/227858f.pdf>



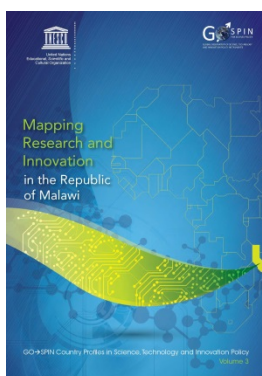
### **Mapping Research and Innovation in the Republic of Zimbabwe**

ISBN: 978-92-3-100034-8  
Published by UNESCO, 2014  
204 p., ENG

This second volume in UNESCO's online series of GO→SPIN Country Profiles in Science, Technology and Innovation Policy is dedicated to the research and innovation landscape of Zimbabwe. GO→SPIN is helping Member States to monitor and evaluate their performance in science, engineering, technology and innovation, via a standard methodology for analysing policies, legal frameworks, operational policy instruments and a series of indicators. The study includes

different inventories of the various components of their national innovation system. This monitoring tool has been designed to help countries reform and upgrade their national science and innovation systems and governance.

<http://unesdoc.unesco.org/images/0022/002288/228806e.pdf>



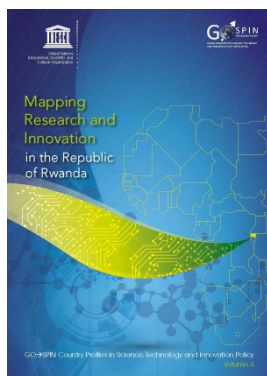
### **Mapping Research and Innovation in the Republic of Malawi**

ISBN: 978-92-3-100032-4  
Published by UNESCO, 2014  
225 p., ENG

This is the third volume in its series of country profiles in science, technology and innovation (STI) policy. Mapping Research and Innovation in the Republic of Malawi reveals an intriguing paradox: despite being one of the poorest countries in the world, Malawi devotes 1% of its gross domestic product (GDP) to research and development (R&D), one of the highest ratios in Africa. Although R&D spending remains low in real terms, Malawian scientists publish more in mainstream journals – relative to GDP – than researchers in any other country with

a similar population size.

<http://unesdoc.unesco.org/images/0022/002288/228807E.pdf>



### Mapping Research and Innovation in the Republic of Rwanda

ISBN: 978-92-3-100126-0  
Published by UNESCO, 2015  
284 p., ENG

Mapping Research and Innovation in the Republic of Rwanda is the fourth in a series of country profiles prepared by the Global Observatory of Science, Technology and Innovation Policy Instruments (GO->SPIN), a new UNESCO initiative. In 2000, following the harrowing disruptions of the war and Genocide, through Rwanda Vision 2020 science, engineering, technology and innovation (SETI) became a cross cutting pillar to achieve a knowledge economy by 2020.

The country has made big strides in becoming very business-friendly. The Human Development Index has progressed increasing its value from 0.23 (1995) to 0.506 (2013). Nevertheless, are policies—particularly those affecting SETI—going to bring about the transformation?

<http://unesdoc.unesco.org/images/0023/002347/234736e.pdf>



### UNESCO Science Report: Towards 2030

ISBN: 978-92-3-100129-1  
Published by UNESCO, 2015  
794 p., incl. bibl., ENG

Most countries, regardless of their level of income, are now incorporating science, technology and innovation in their national development agenda, in order to make their economies less reliant on raw materials and more rooted in knowledge. This is one of the key findings of the UNESCO Science Report: towards 2030.

Written by more than 50 experts who are each covering the country or region from which they hail, the UNESCO Science Report: towards 2030 provides more country-level information than ever before. The trends and developments in science, technology and innovation policy and governance between 2009 and mid-2015 described here provide essential baseline information on the concerns and priorities of countries that could orient the implementation and drive the assessment of the 2030 Agenda for Sustainable Development in the years to come.

To download: <http://unesdoc.unesco.org/images/0023/002354/235406e.pdf>

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#### UNESCO science report, towards 2030: executive summary

<http://unesdoc.unesco.org/images/0023/002354/235407e.pdf>

#### Rapport de l'UNESCO sur la science, vers 2030: résumé exécutif

<http://unesdoc.unesco.org/images/0023/002354/235407f.pdf>

#### Informe de la UNESCO sobre la ciencia, hacia 2030: resumen ejecutivo

<http://unesdoc.unesco.org/images/0023/002354/235407s.pdf>

#### ДОКЛАД ЮНЕСКО ПО НАУКЕ: на пути к 2030 году. РЕЗЮМЕ

<http://unesdoc.unesco.org/images/0023/002354/235407r.pdf>

#### 联合国 教科文组织 科学报告 面向 2030 年 综述

<http://unesdoc.unesco.org/images/0023/002354/235407c.pdf>

**Relatório de ciência da UNESCO: rumo a 2030, visão geral e cenário brasileiro**

<http://unesdoc.unesco.org/images/0023/002354/235407por.pdf>

**UNESCO Wissenschaftsbericht: der Weg bis 2030, Zusammenfassung**

<http://unesdoc.unesco.org/images/0023/002354/235407ger.pdf>