

# EWRA news

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## CONTENTS

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### Opinion

- The Natural Risk Indicator: A practical way to evaluate capacity and preparedness to face natural hazards

### Comment & Debate

- Green Banking Perspective

### News & Articles

- L-index for evaluating team published research

### Bits & Pieces

- EWRA – VI International Symposium: 'Water Engineering and Management in a Changing Environment'
- Course on Membrane Technology, Process and System Design
- Water Supply Systems: Preventive Maintenance and Technological Innovations
- EWRA Announcement: Permanent Working Groups

### New Books

- Water Shortages: Environmental, Economic and Social Impacts
- Sustaining Groundwater Resources: A Critical Element in the Global Water Crisis
- Integrated Watershed Management in Rainfed Agriculture
- Drought: Past Problems and Future Scenarios
- Water Resources Planning and Management
- Water Sustainability A Global Perspective
- Making the Most of the Water We Have: The Soft Path Approach to Water Management
- Design of Urban Stormwater Controls, MOP 23
- Water Security: Managing at the Water-Food-Energy-Climate Nexus

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### EWRA news: The bulletin of EWRA

Responsible: Prof. G. Tsakiris, President of EWRA  
Editor: B. Charalambous, Secretary General of EWRA  
Assistant Editor: Dr D. Alexakis  
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[www.ewra.net](http://www.ewra.net)

### The Natural Risk Indicator: A practical way to evaluate capacity and preparedness to face natural hazards

*G. Tsakiris*

The year 2010 has been characterised as a year with major natural catastrophes in many parts of the world rarely encountered in previous years. It is supported that due to a variety of reasons the damages from natural hazards are increasing exponentially with respect to time. The major cause (according to scientists and governments) is the climate change which creates more floods and droughts with higher severity. The increase of intensity of the natural hazards together with the unprotected systems results in exacerbated damages with huge dimensions.

Latest examples of floods in Pakistan, Northern Australia and elsewhere have shown that any country, poor or developed, is vulnerable to natural hazards. Furthermore if the elements at risk are more valuable and expensive the economic damages may be immense.

Several scientific methods (based on probabilities and estimated damages) have been proposed in the past for calculating the annualised risk due to each natural hazard in the vulnerable areas of each country. The

*(cont. page 2)*

EWRA – 6<sup>th</sup> International Symposium:

### 'Water Engineering and Management in a Changing Environment'

(Catania, Italy, 29 June – 2 July 2011)

**Deadline for abstract submission: 15 February 2011**

Further information available on:

[ewra2011.ewra.net](http://ewra2011.ewra.net) & [www.ewra2011.dica.unict.it](http://www.ewra2011.dica.unict.it)

annualized risk is expressed as the average economic loss per year caused by each natural hazard time series in a geographical area (e.g. the territory of a country).

By adding the annualised risk of all natural hazards in the same territory of a country (floods, droughts, earthquakes, wild fires, landslides etc), we can reach a figure (the annualised composite natural risk) which then can be compared with the GDP of the country. The resulting dimensionless indicator, the Natural Risk Indicator (NRI) can be used for representing the weakness of the country (compared with its capacity) to face natural calamities.

The Natural Risk Indicator as a dimensionless ratio can be used for rating of countries and for setting priorities for preparedness planning of governments and international organisations. It may be also used as an indicator of the level of development of each country, in addition to GDP, the percentage of illiteracy etc.



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## Green Banking Perspective

*B. Todorovic*

A specific complex financial situation exists at the moment in many European countries (e.g. Greece, Ireland, Spain, France etc.). It can be characterized with the following parameters, just on the different level for each country:

- Increased unemployment.
- Banks facing a rise in a number of clients not able to cover their financial obligations (loans, credit cards ...), also leading to a lower number of approved loans per year.
- Municipalities, regions and public companies (e.g. Public Power Company - PPC and The Athens Water Supply and Sewerage Company - EYDAP SA in Greece) having insufficient funds for funding new works and projects, despite the needs.
- Private companies having a cash-flow problem when working with governmental or public institutions.
- Inadequate absorption of various EU aid funds, since they require the co-funding from local institutions to be verified in order to finance new works and projects, or even for the financial scheme to be closed and the money already spent in order

to reimburse the co-funding percent. Though a standard procedure, such requests often present a difficulty for governmental or public institutions with insufficient funds and for companies with cash-flow problem.

From the above emerges one possible solution to all problems simultaneously in the form of a Green Banking Perspective. Though it resembles the Public-Private Partnership (PPP) and the Private Finance Initiative (PFI), it is named Green Banking since it should only be applied for the works and projects of importance for public welfare, capable of deriving the value-added component and contributing to energy conservation, environmental protection and prevention of climate changes. The Green Banking Perspective might work effectively in the following way:

1. Private companies, in coordination with governmental and/or public institutions, make proposals for new works necessary to improve the conditions in some part of the country (e.g. medium or large scale energy production from renewable sources, water supply, sewage, water treatment plants, various infrastructures etc.).
2. New planned works should use all available technology to insure the lowest possible maintenance cost through energy efficiency and other similar measures. In the same time the proposed works should contain the value-added component for self-sustainable operation and financial payback of the investment, which is crucial for the financial viability of the system.
3. Having the preliminary contract with governmental and/or public institutions for medium or long term compensation from standard periodical income that those institutions gain from public participation, private companies can apply for a medium or long term loans from interested banks.
4. If viable, the proposed works and projects should also be filed for requests for EU aid funding (e.g. beneficiaries of European Union Cohesion Policy and grant recipients and contractors receiving EU funds via national and regional authorities). Even if that is not the case, the above financial scheme would not impose a burden to governmental and/or public institutions' budgets, allowing for immediate start of a number of important and urgent projects. Last, but not least, it would give a significant points to any politician that would support such initiative.
5. Banks should have the particular interest for approving such loans for a number of reasons, to mention only a few:
  - a. Governmental and/or public institutions would in fact be a main guarantee for the regular payment of loans, besides the standard mortgage on the

constructed facilities.

- b. Banks could influence the selection of works and projects, in the sense of the type, location and other parameters, targeting to assist the economy in certain geographical areas and/or social categories of importance for the operation of the specific bank. If properly coordinated, such action in specific areas might significantly reduce impact and reduce the number of unpaid loans, repossession of houses and cars, over charged credit cards etc.
  - c. Green Banking would open a new perspective for improving the turnover of banks, overcoming the negative impact of the economic crisis, in particular in the loan's departments.
6. Finally, the proposed system would give the opportunity and initiative to private companies to open new activities and ensure financial stability for a number of years, thus overcoming the recession. Needless to say that it would have an immediate positive impact on reducing unemployment.

Green Banking Perspective represents a logical continuation of market liberalization and transfer to the principles of free competition in the area of environmental protection, as it was already performed in many countries in telecommunications or power supply. For example, the Italian electricity market, one of the most liberalised in Europe, currently comprises around 100 utility companies including major European groups.

Both the Centre for the Assessment of Natural Hazards and Proactive Planning & The Laboratory of Reclamation Works & Water Resources Management, as non-profit organizations within the National Technical University of Athens (NTUA), are interested in supporting the success of Green Banking Perspective by offering its expertise in project selection, consulting in application of the latest technologies and supervision of the works performed, ensuring the overall quality of the proposed system. They are the ideal partners due to their long experience both in scientific and in practical domain, capable of covering all aspects of supporting such projects with its diverse personnel, as well as of its unique position as an independent non-profit institutions not belonging to any of the groups involved in the system proposed above. NTUA has also started an initiative for promoting Green Banking Perspective in Europe through the partner Universities in EU, in Balkan and other countries with whom NTUA has a traditional and successful cooperation.

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 Agricultural University of Athens

## L-index for evaluating team published research

*G. Tsakiris*

*Editor-in-chief of the journal Water Resources Management*

In an attempt to evaluate published research in a concise and illustrative way several indices have been proposed in the past. Among them the index with the widest acceptance is the h-index which has been gradually used for rating candidates for posts in universities and research institutions.

However, as I had the opportunity to explain in the past (EWRA news, 2009b and 2010a), the h-index has some attributes that impede it for evaluating published research in a rational and unbiased way. Among the disadvantages for using the h-index are:

- It is not sensitive (small range regardless of the performance)
- It is unfair to scientists with worldwide recognition (it is practically the same for a paper to be cited 10 or 100 times)
- Each unit of the index means quite different performance (e.g. 1 (from 0 to 1) means 1 paper with 1 citation; on the other hand, 1 unit of h-index from 10 to 11 means 1 more paper with 11 citations). In essence the value of the index is not proportional to the performance.
- It cannot be used for the evaluation of a research unit or a department of a university.

After a long study on the results produced by the h-index, I had the opportunity to present a new index, the L-index, during the General Assembly of the European Water Resources Association held in Lemessos (June 2009).

The L-index is calculated by multiplying the number of papers (n) times the logarithm (base 10) of the average number of citations per paper published (N/n) and rounded to the nearest integer, provided that N/n>1. Therefore:

$$L\text{-index} = [n * \log N/n]$$

In case N/n≤1 a different procedure should be followed (Tsakiris, 2009).

In this note it is interesting to show how the L-index can be used for the evaluation of the published research of a university or research institution unit. In our example the Civil Eng. Dept. of several universities are presented in an attempt to compare their performance. The values of the Table 1 refer to the average member of staff (Dimitrakopoulos, 2010).

As can be seen from Table 1 the h-index values show a rather misleading picture against the universities with high performance. If for instance we compare ETH with ENPC it is observed that ETH has a double value of h-index which is nearly triple if the L-index is used. Obviously this is because each unit of h-index has a different weight as explained earlier, thus giving a distorted picture of rating. On the opposite L-index shows a more clear and commensurate rating.

Further to the above it was noticed that due to many collaborative papers published jointly by two or more

members of the same department these papers have been counted several times (proportionally to the members of staff of the unit being co-authors). To correct this wrong approach the rating procedure should start from the unit (e.g. department) and not from each individual member. Since the number of papers co-authored by two or more members differ substantially from university to university, it is logical to expect different rating from the one presented in the previous table.

Table 1. The rating indices of the average member of the Civil Eng. Dept. of 9 representative European Universities

Institution	No of papers n	No of citations N	h-index	L-index
Imperial College	44.2	322.2	7.4	38
ETH, Zurich	40.8	333.7	7.3	37
National Technical University of Athens	23.5	109.1	4.1	16
Polytechnico di Milano	20.7	125.7	4.5	16
Technical University of Munich	18.8	117.3	3.9	15
ENPC, France	16.1	96.7	3.6	13
Royal Institute of Technology Sweden	12.8	42.7	2.6	7
Graz University of Technology	5.0	18.4	1.1	3
Technical University of Madrid	1.7	4.0	0.3	1

Let us continue this exercise by considering the same department from four different universities with close performance according to h-index or L-index. The rating is now based on a procedure, which avoids double or triple counting due to co-authorship. The following table (Table 2) is produced.

Table 2. Rating of the same department of four universities based on the total no of papers and citations

University Unit	Members of staff	No of papers	Total no of citations	No of paper per member	L-index
I	75	1575	141750	21	41
II	35	560	56560	16	32
III	54	810	64800	15	28
IV	48	576	31104	12	20

As can be noticed the L-index is calculated for the whole performance of each department and adapted for the average member of staff. Obviously in this case h-index cannot be calculated leaving L-index the unique index for rating published research of university or research institution units.

Conclusively, in case of evaluation of published research by a team of researchers or a unit of a university/research institutions, the L-index is a unique index. Any other rating using figures produced from data of individual researchers may lead to a distorted and misleading picture.

References

Tsakiris G. (2009). EWRA news, pp 5-6  
 Tsakiris G. (2010). EWRA news 1, pp 2-3  
 Dimitrakopoulos A. (2010). TEE2603 (11/10/10) (in Greek)

EWRA – VI International Symposium  
 ‘Water Engineering and Management in a Changing Environment’  
 (Catania, Italy, 29 June – 2 July 2011)

Water is essential for human, animal and plant life and is also a key driver of economic and social development. Protection of water resources and promotion of a sustainable water use are therefore main cornerstones of environmental policies worldwide. Although important progress on water management, infrastructure, technologies and legislation have been made over the past decades in many developed and developing countries, further efforts are still required to properly face major concerns such as floods and droughts, water scarcity, water pollution, as well as access to safe sanitation, which can be further intensified by climate change, population growth and urbanization.

The objective of the 6th International Symposium of the European Water Resources Association, which is organised in cooperation with the Italian Hydrotechnic Association, is to provide an open forum for analyzing the main challenges for an effective water resources management, also able to adapt to climate change impacts. Particular emphasis will be devoted to the developments in the application of EU policies on water resources management (i.e. Water Framework Directive 2000/60, Floods Directive 2007/60 and Water Scarcity and Droughts Strategy), as well as to the latest



advancements in water engineering all over the world.

Sections

Section A — Water resources management

- Evaluation of implementation of the EU Directives 2000/60 and 2007/60

Section B — Scientific Advances

- Advanced models and methods to improve the understanding and mitigation of hydrological extreme events
- Recent approaches and tools for water resources management under global change
- Technological and management innovations for water services

## Section C — Specialised Workshops

- Water quality, desalination and non-conventional water resources
- Climate change, extreme events and water security
- Water systems efficiency
- Energy and technology

*Venue*

The Symposium will be held in Catania, located in the Eastern coast of Sicily, at the foothills of beautiful Mount Etna. Catania international airport is very well connected with many Italian airports (including Rome and Milan) as well as with several European cities.

*Important Dates*

**Submission of abstract:** 15 February 2011

Notification of acceptance: 15 March 2011

Submission of full paper: 30 April 2011

Acceptance: 31 May 2011

*Registration Fee*

	On or before March 31, 2011	From April 1, 2011
EWRA members	280 €	340 €
Non EWRA members	310 €	360 €
Students	150 €	150 €

Registration fee includes coffee breaks, two lunches, the CD of Proceedings and the book of abstracts

*Proceedings*

A book of abstracts and a CD with the proceedings of the conference will be distributed to the participants. Selected papers will be published in special issues of EWRA journals "Water Resources Management" and "European Water".

*Detailed information*

Organisation is supported by the secretariats of Civil Engineering of Catania University and the secretariat of the Laboratory of Reclamation Works and Water Resources Management (School of Rural and Surveying Engineering of NTUA).

Website: [www.ewra2011.dica.unict.it](http://www.ewra2011.dica.unict.it)

E-mail: [ewra2011@dica.unict.it](mailto:ewra2011@dica.unict.it)

### Course on Membrane Technology, Process and System Design

(February 29 – March 2, 2011, Genoa, Italy)

A 3-day intensive course - Lecturer Mark Wilf, PhD

The seminar topics include practical information about performance and operating conditions of reverse osmosis and nanofiltration technology for brackish and seawater desalting. The program includes introduction to membrane technology, description of commercial membrane elements, illustration of the membrane system design process and overview of systems operation.

Further information available on:

[http://www.desline.com/Wilf\\_Feb2011.pdf](http://www.desline.com/Wilf_Feb2011.pdf)

### Water Supply Systems: Preventive Maintenance and Technological Innovations (16<sup>th</sup> September 2011, Athens, Greece)

The European Water Resources Association (EWRA) announces a one day conference and exhibition which will be held in Athens, Greece on 16<sup>th</sup> September 2011.

The aim of the event is to bring together leading edge technologies in the field of the management of potable water distribution network. Water Utilities around the world have over the years been paying greater attention to the condition of one of their most valuable assets, the buried pipe network. However, due to poor or indeed lack of maintenance and rehabilitation this valuable asset is in a very critical condition as most water networks are gradually ageing.

The one day conference will address issues such as preventive maintenance for water distribution network and present cutting edge technologies and equipment which form part of an efficient and effective strategy for proper operation and maintenance of a water supply network.

The conference is organised by the Centre for the Assessment of Natural Hazards & Proactive Planning of the National Technical University of Athens in the framework of PM4WAT project (Leonardo DaVinci). Details of the conference will be published soon. Please visit regularly the EWRA website [www.ewra.net](http://www.ewra.net) for more details.

### EWRA Announcement: Permanent Working Groups

Following the agreement of the General Assembly in Lemessos (June 2009), EWRA members are invited to participate in the proposed Permanent Working Groups which have been established. The working groups are:

- Water Quality, Desalination and Non-Conventional Water Resources (Coordinator: George Tsakiris)
- Water Resources Management (Coordinator: Rodrigo Maia)
- Climate Change, Extreme Events and Water Security (Coordinator: Antonio Cancelliere)
- Water Systems Efficiency (Coordinator: Bambos Charalambous)
- Energy and Technology (Coordinator: Stuart Hamilton)

Interested individuals who wish to join the above Working Groups are invited to submit their contact details together with a short bio to the Secretary General of EWRA B.Charalambous by 15 February 2011 ([bcharalambous@cytanet.com.cy](mailto:bcharalambous@cytanet.com.cy)). The activities and progress of work in each Group will be overseen by a

member of the Executive Committee (EC) of EWRA as detailed above.

Individuals are encouraged to submit short proposals, not more than 1000 words, on issues that they are interested to investigate by 15 February 2011. The EC of EWRA will evaluate these and facilitate upon selection of a proposal the set up of a team under the relevant Working Group for carrying out the task. Deliverables will be submitted to the EC for review and results presented at EWRA's symposia and conferences. Dissemination of the output from the Working Groups will be through EWRA's journals and magazines.

### **Water Shortages: Environmental, Economic and Social Impacts (Water Resource Planning, Development and Management)**

Briggs A.C. (Editor)

Publication Year: 2011 (will be released on March)

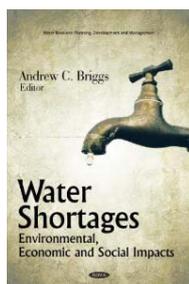
Published by: Nova Science Publishers

ISBN-10: 1617283096

ISBN-13: 978-1617283093

Binding: Hardback

Pages: 251



Many areas around the globe suffer from water shortages caused by increased demand for water and by frequent and intense drought episodes. To face these water scarcity problems measures should be taken for lowering the water demand, improving the performance, and utilizing new sources of water.

This new and important book discusses the environmental, economic and social impacts of water shortages around the globe.

### **Sustaining Groundwater Resources: A Critical Element in the Global Water Crisis (International Year of Planet Earth)**

Anthony J. Jones A. (Editor)

Publication Year: 2011 (will be published on June)

Published by: Springer; 1st Edition

ISBN-10: 9048134250

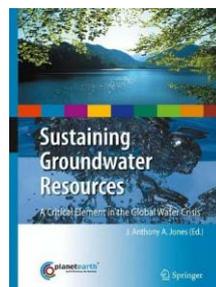
ISBN-13: 978-9048134250

Binding: Hardcover

Pages: 240

This title looks at the technical, socio-economic and political problems being faced, and at the developments in groundwater science and management that may help create a sustainable future for our planet. It focuses on the following issues: (a) link between groundwater,

poverty alleviation and millennium development goals; (b) trends in Groundwater Science/Current trend in Groundwater Science, (c) the value of groundwater resources in our planet Earth; (d) challenges of



protection of groundwater resources; (e) sustainable groundwater resource management for sustaining the society; and (f) groundwater quality, urbanization and industrialization: interplay of impacts and influences. This volume is intended to present two

key aspects: (a) the current state-of-the-art in groundwater science and exploration; and (b) the current problems: climate change, pollution, growing demand, lack of water resources and socio-economic and political contexts, lack of technological or monetary resources, falling water tables and groundwater mining.

### **Integrated Watershed Management in Rainfed Agriculture**

Suhas P. Wani, Johan Rockstrom, Kanwar Lal. Sahrawat

Publication year: 2011 (will be published on June)

Publisher: CRC Press; 1st Edition

ISBN-10: 041588277X

ISBN-13: 978-0415882774

Binding: Hardcover

Pages: 500

This title provides a comprehensive presentation of the realization of improved rain fed agriculture yield in dry and semi-arid land areas. It includes techniques to improve the livelihood of the many small-scale farmers in developing countries as well as examples and case studies for further support. The methods discussed have recently shown to be successful and economically remunerative in various countries. Intended for (post) graduate students, researchers and professionals (investors, policy makers) working on dry land and sustainable agriculture and water and natural resources management. Suited for courses in watershed development, dry land agriculture, soil and water management.

### **Drought: Past Problems and Future Scenarios**

Sheffield J., Wood E. F.

Publication year: 2011 (will be published on May)

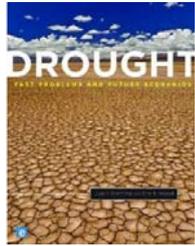
Publisher: Earthscan Publications Ltd.; 1st Edition

ISBN-10: 1849710821

ISBN-13: 978-1849710824

Binding: Hardcover

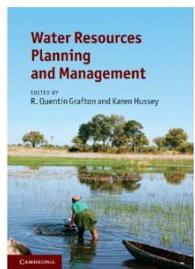
Pages: 192



Drought is a natural phenomenon characterised by significant decrease of water availability over a large area and during a significant period of time. This title provides a review of the historical occurrence of global drought, particularly during the 20th century and assesses the likely potential changes over the 21st century under climate change. The book includes documentation of the occurrence and impacts of major 20th century drought events and analysis of the contributing environmental and climatic factors that act to force and dissipate drought. Contemporary drought is placed in the context of climate variability since the last ice age, including the many severe and lengthy drought events that contributed to the demise of great civilizations, the conversion of forests to deserts and the disappearance of lakes and rivers. The work is based on detailed research that has looked at drought occurrence over the 20th century, modelling and seasonal prediction, global drought monitoring and future projections from climate models.

#### Water Resources Planning and Management

Quentin Grafton R., Hussey K. (Editors)  
 Publication year: 2011 (will be published on March)  
 Publisher: Cambridge University Press  
 ISBN-10: 0521762588  
 ISBN-13: 978-0521762588  
 Binding: Hardcover  
 Pages: 772

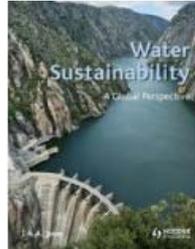


This book brings together multiple disciplines to help resolve and understand problems of water quality and scarcity from a global perspective. Its 'foundation' chapters and case studies will be greatly valued by professionals and researchers involved in hydrology, environmental studies, water resources, governance and public policy, law, and economics.

#### Water Sustainability - A Global Perspective

Jones J. A.  
 Publication year: 2011 (will be published on March)  
 Publisher: Oxford University Press, USA; 1st Edition  
 ISBN-10: 1444104888  
 ISBN-13: 978-1444104882

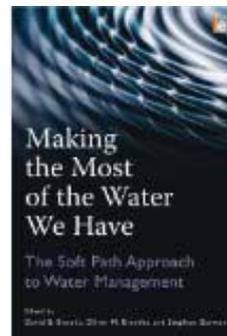
Binding: Paperback  
 Pages: 256



This title examines water availability, the impact of climate change and the problems created for water management worldwide as well as possible solutions. It is the first textbook to meld the physical and human aspects affecting the world's water resources. It examines the restless water cycle, the impact of past and future climate change and the problems created for water management. Moreover, the author investigates the human factors: urbanisation, population growth, the commercialisation of water including privatisation, globalisation and the role of international organisations, as well as the impact of war, terrorism and the credit crunch. The future and current solutions are discussed including water treatment systems, crop modification, rainwater harvesting and desalination. It is approaching the subject from the point of view of international relations, geography or environmental management. Suited for courses on water sustainability.

#### Making the Most of the Water We Have: The Soft Path Approach to Water Management

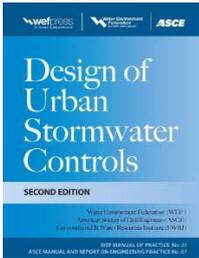
David B. Brooks, Oliver M. Brandes, Stephen Gurman  
 Publication year: 2011 (will be published on March)  
 Publisher: Earthscan Publications Ltd.  
 ISBN-10: 1849713081  
 ISBN-13: 978-1849713085  
 Binding: Paperback  
 Pages: 296



This title aims to present and apply the water soft path approach. It has three objectives: to demonstrate that soft path analysis is practical and analytical, and not just eco-dreaming; to indicate that soft paths are not only conceptually attractive but that they can be made politically and economically feasible; and to bring to a wider audience the concept and the potential of water soft paths. These goals are reflected by the scope of the book which is organized around the three aspects of any soft path: a vision of a sustainable water future based on the soft path concept; an analytic method to define alternative routes to that future (most literally, the soft paths), as illustrated by case studies; and a tool kit for planners and other practitioners.

**Design of Urban Stormwater Controls, MOP 23 (Water Resources and Environmental Engineering Series)**

Water Environment Federation  
 Publication year: 2011 (will be released on October)  
 Published by: McGraw-Hill Professional; 2nd Edition  
 ISBN-10: 0071704442  
 ISBN-13: 978-0071704441  
 Binding: Hardcover  
 Pages: 608



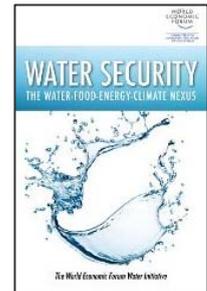
This title reviews: the institutional framework for stormwater management program implementation; design of runoff controls; the effects of uncontrolled runoff on receiving waters; the principles and practices of stormwater management; maintenance and cost of those controls; methodologies

for performance assessment; and analytical tools for design and evaluation.

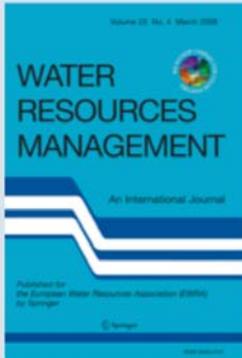
**Water Security: Managing at the Water-Food-Energy-Climate Nexus**

The World Economic Forum Water Initiative  
 Publication year: 2011  
 Published by: Island Press; 1st Edition  
 ISBN-10: 159726735X  
 ISBN-13: 978-1597267359  
 Binding: Hardcover  
 Pages: 272 pages

This book suggests how business and politics need to manage the water-energy-food-climate axis as leaders negotiate the details of the climate regime that replace Kyoto Protocols.



**European Water Resources Association Journals**



**Water Resources Management**

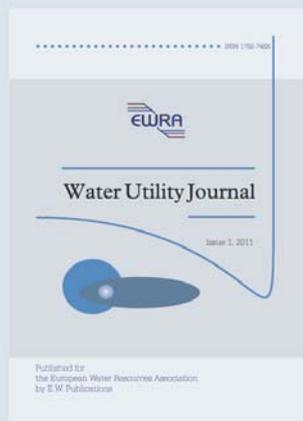
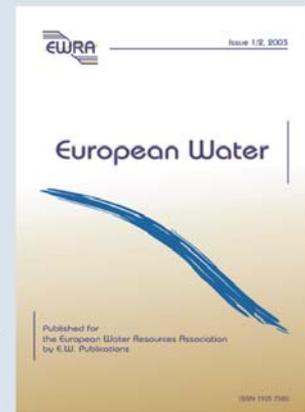
- starting date: 1987
- schedule: 15 issues per year

[www.springerlink.com/content/0920-4741/](http://www.springerlink.com/content/0920-4741/)

**European Water**

- starting date: 2003
- schedule: 4 issues per year

[www.ewra.net/ew](http://www.ewra.net/ew)



**Water Utility Journal**

- starting date: 2011
- schedule: 2 issues per year

[www.ewra.net/wuj](http://www.ewra.net/wuj)