

EWRA news

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Welcome note

Welcome to the new issue of EWRA news!

We welcome you to the new issue of the EWRA news. The EWRA news is published twice a year under the auspices of European Water Resources Association. EWRA is an international non-profit association aiming at enhancing cooperation and promoting the exchange of scientific knowledge in the field of water resources between European scientists and engineers. The mission of this bulletin is to convey information related to water resources (conferences, publications) and to provide overviews of some of the most recent scientific results.

We encourage our readers to participate in the process of information exchange by submitting technical notes and short presentations for publication in this bulletin.

The web version of EWRA news can be found in the websites www.ewra.net and www.waterinfo.gr.

We hope you feel that this service will be helpful for our members and anybody interested in water resources issues.

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EWRA news: The bulletin of EWRA

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www.ewra.net

General Assembly of
EWRA

Limassol, Cyprus, 25 June 2009

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EWRA

7th International Conference

Water Conservancy and Risk Reduction under Climatic Instability

Limassol, Cyprus, 25-27 June 2009

<http://www.eng.ucy.ac.cy/EWRA 2009>

Global Water Security: Direct Action Now

George Tsakiris

It is true that water is the most abundant natural resource on earth. It is also true that for hundreds of years in the past it was commonly taken for granted as nature's gift. The value of water has been regarded by philosophers and scholars in ancient times as the "most precious resource" and "the driver of nature".

Long after the industrial revolution, water problems gradually emerged related to water scarcity, water pollution and calamities from natural hazards caused by extreme phenomena of the hydrological cycle. During the last century an increasing abuse of water resources was practiced together with expanding population, industrialisation and urbanisation, which increased the burden on governments and professionals to safeguard water quantity and quality for the domestic, agricultural and other economic sectors. The booming irrigation development in most countries created more stress in the water sector since the "requirements" were multiplied. Big water projects together with the expansion of economic activities, created a higher but also more vulnerable equilibrium between availability and demand. The consequence of this "ever"-continuing tendency seemed to reach a deadlock due to the new problems of increased pollution, overexploitation of aquifers and stagnation of water sources.



Source: *The Guardian Weekly* (8/5/2009)

The approaching global water crisis was predicted by scientists in conferences and symposia from the early seventies. However, governments and international organizations seemed to be reluctant to realise and appreciate the seriousness of the global water situation.

Even in the International conferences organised by the United Nations in Dublin and Rio de Janeiro in the early nineties, water was a rather minor issue and was discussed indirectly. The primary interest of the participating leaders of state was focused on issues such as climate change, biodiversity and deforestation.

Recently, an increasing number of states started to recognise that water problems are multiplying and that

several anthropogenic causes lead to deterioration in the water availability and use. Climate change is the most recent threat to water quantity and quality, worldwide. According to the IPCC projections during the next decades, the magnitudes and the patterns of precipitation and air temperature are expected to change in most parts of the world. Expected sea level rise also threatens most of the coastal aquifers and the water security of most coastal zones.

It is fully understood that the "climate change" hazard is pressing the world to curb emissions of CO₂ and other greenhouse gases which are blamed for the climate change. We all hope to reach a consensus during the Copenhagen World Summit and to sign a brave new agreement which will replace Kyoto protocol.

It is also fully understood that water and the environment will be affected mostly by the anticipated climate change. However, whatever will be decided in Copenhagen on energy and emissions, it seems indirect and inadequate for solving the water problems which exist and will increase with or without the various trends in gas emissions.

In short we believe that "water problems" are affected by climate change but can be also dealt with by more direct and efficient methods. In this context, although EWRA participates actively in the ongoing dialog on climate change, it focuses its attention on direct actions on water problems at the national, regional and international level. Our activities (meetings, symposia, conferences, journals and publications) reflect exactly this priority.

The EWRA Conference in Cyprus is expected to enrich the knowledge among academics and professionals as to how to improve the planning and management of water resources in an integrated, equitable, sustainable and adaptive way to face present and future water problems. In this respect, EWRA systematically promotes proactive and preparedness planning with the most democratic procedures through the involvement of all stakeholders, aiming at tackling water problems efficiently and comprehensively.

Looking at the topics, the papers submitted, and the list of participants, I am sure that the conference will be fruitful and useful for the participants, guiding our actions directly against "problems and causes" with the objective of securing water availability and quality for future generations in our countries.



George Tsakiris is a professor of water resources management at the Lab. of Reclamation Works & Water Resources Management of the National Technical University of Athens, Director of the Centre for the Assessment of Natural Hazards & Proactive Planning, Editor in Chief of the Water Resources Management Journal and President of EWRA.

The Truth about Climate Change

John Theodore Houghton

Vested interests have tried to spread misinformation about global warming, but scientific evidence shows urgent action is needed

Many people ask how sure we are about the science of climate change. The most definitive examination of the scientific evidence is to be found in the work of the Intergovernmental Panel on Climate Change (IPCC) and its last major report published in 2007. I had the privilege of being chairman or co-chairman of the panel's scientific assessments from 1988 to 2002.

Many hundreds of scientists from different countries were involved as contributors and reviewers for these reports, which are probably the most comprehensive and thorough international assessments on any scientific subject ever carried out. In June 1995, just before the G8 summit in Scotland, the academies of science of the world's 11 largest economies (the G8 plus India, China, and Brazil) issued a statement endorsing the IPCC's conclusions and urging world governments to take urgent action to address climate change. The world's top scientists could not have spoken more strongly.

Unfortunately, strong vested interests have spent millions of dollars on spreading misinformation about climate change. First, they tried to deny the existence of any scientific evidence for global warming. More recently, they have largely accepted the fact of anthropogenic (man-made) climate change but argue that its impacts will not be great, that we can "wait and see," and that in any case we can always fix the problem if it turns out to be substantial.

The scientific evidence does not support such arguments. Urgent action is needed both to adapt to the climate change that is inevitable and to reduce emissions of greenhouse gases, especially CO₂, to prevent further damage as far as possible.

At the Earth summit in Rio de Janeiro in 1992, the world's nations signed up to the Framework Convention on Climate Change (FCCC), the objective of which is "to stabilise the concentration of greenhouse gases in the atmosphere at a level that does not cause dangerous interference with the climate system ... that allows ecosystems to adapt naturally to climate change, that ensures food production is not threatened, and that enables economic development to proceed in a sustainable manner." Such stabilisation would also eventually stop further climate change.

It is now recognised that widespread damage due, for instance, to sea level rise and more frequent and intense heat waves, floods and droughts, will occur even for small increases of global average temperature. Therefore it is necessary that very strong efforts be

made to hold the average global temperature rise below 2C relative to its preindustrial level.

If we are to have a good chance of achieving that target, the concentration of CO₂ must not be allowed to exceed 450 parts per million (it is now nearly 390 ppm). This implies that before 2050 global emissions of CO₂ must be reduced to below 50% of the 1990 level (they are currently 15% above that level), and that average emissions in developed countries must be reduced by at least 80% of the 1990 level. The UK has already committed itself to a binding target to reduce emissions by that amount, and President Barack Obama has expressed intention that the United States should also set that target.

One clear requirement is that tropical deforestation, which is responsible for 20% of greenhouse gas emissions, be halted within the next decade or two. Regarding emissions from the burning of fossil fuels, the International Energy Agency (IEA) in its Energy Technology Perspectives has set out in detail the technologies and actions that are needed in different countries and sectors to meet these targets.

For the short term, the IEA points out that very strong and determined action will be necessary to ensure that global CO₂ emissions stop rising (the current increase is more than 3% per year), reach a peak by about 2015, and then decline steadily toward the 2050 target. The IEA also points out that the targets can be achieved without unacceptable economic damage. In fact, the IEA lists many benefits that will be realised if its recommendations are followed.

What is required now is recognition that anthropogenic climate change will severely affect our children, grandchildren, the world's ecosystems, and the world's poorer communities, and that the severity of the impact can be substantially alleviated by taking action now.



John Theodore Houghton, a former professor of atmospheric physics at Oxford University, and founder of the Hadley Centre for Climate Prediction and Research, was the co-chair of the IPCC's scientific assessment working group and lead editor of its first three reports.

This article was first published on guardian.co.uk at 08.00 BST on Monday 27 April 2009. It was last updated at 15.03 BST on Monday 27 April 2009.

Global Water Efficiency Meeting: Memorandum of Resolutions

The International Meeting “Global Water Efficiency” took place on 28th of November 2008 in Limassol (Cyprus) was a successful event. The meeting was supported by EWRA. The main topic of the Meeting was global water security with emphasis in Cyprus drought period and associated measures. The meeting gathered 150 participants from 30 countries together with a panel of distinguished decision makers from Cyprus. International experts including Mr. Ch. Theopemptou, Environment Commissioner of Cyprus; Prof. G. Tsakiris (NTUA), President of European Water Resources Association; Prof. M. Balaban (MIT), Secretary General of the European Desalination Society; Dr V. Ciomos, President of Rumanian Water Resources Association; Prof. M. Lange, Director of Cyprus Research Centre; Mrs M.A. Dickinson, Executive Director of the Alliance for Water Efficiency and Dr R. McKenzie, Managing Director of Water Resources Planning and Conservation of South Africa. The International Meeting concluded in the following actions and measures to be taken for facing up water shortage in Cyprus:

1. A single coordinating body for water resources planning and management for Cyprus is required.
2. A task force (including international experts) should be formed for formulating a Preparedness Plan (Strategic and Operational) for facing Drought and Water Shortage Conditions.
3. A reliable systematic monitoring of the major water consumption and climatic parameters (including drought indices) is required.
4. In principle, water resources management should be performed starting from the limitations imposed by the environment and should aim at reducing long term water shortage risk. The island water security should be declared as the first priority for achieving sustainable development under the current and future climate instability.
5. During the current water shortage crisis additional efforts should be directed to the following:
 - perform more systematic campaigns for lowering water demands
 - use all viable technical and management options for achieving more efficient distribution and use of water
 - establish a systematic consultation process with all stakeholders for discussing water rights and proposing fresh institutional solutions
 - exploit non-conventional water sources (e.g. rain-water harvesting, reuse, etc) for producing additional water
 - enhance water production from desalination plants for securing higher reliability

(Note: The downscaling of necessary activities to practical and viable measures within the socioeconomic and political system of Cyprus is the task of the Task Force of §2)

EWRA & EDS: Memorandum of Understanding

A Memorandum of Understanding was signed between European Water Resources Association (EWRA) and European Desalination Society (EDS) on 27 November 2008. The two complimentary European organizations agreed upon co-operation for organising common scientific meetings.

The MoU was signed in Limassol (Cyprus) between Prof. George Tsakiris, President of the EWRA and Prof. Miriam Balaban, Secretary General of the EDS. It was agreed that close collaboration of these two organisations would be highly beneficial for the members of the associations:

- to promote and enhance European activities to provide water in Europe
- to participate in the worldwide effort to alleviate water stress and scarcity
- to promote European research and business worldwide in water management, conservation of resources and desalination
- to compare cost of water supply from various conventional and alternative sources such as brackish and seawater desalination
- assess affordable costs and tariffs
- to achieve sustainability and protection for the world's dwindling water supplies whilst protecting the environment
- to compare energy requirements of desalination and other systems

While EWRA addresses the overall needs and shortcomings of existing systems, EDS addresses the specific solutions offered by desalination and water reuse using conventional and renewable energy. Interaction between these organizations is complimentary and will enhance knowledge sharing in the search and implementation of solutions.

Cooperation will be fostered in the following ways:

1. Exchange information on events and activities of the respective associations to establish interaction.
2. Dissemination of information to the respective communities through channels of each organization
3. Support of and participation in each others' activities.
4. Jointly organize common events
5. Joint application for grants for organization of events and projects
6. Capacity building courses
7. Plans to alleviate water emergencies
8. Dissemination of information to the public on water resources science and engineering issues

Prof. Miriam Balaban
Secretary General of EDS

Prof. George Tsakiris
President of EWRA

Evaluating published research

G. Tsakiris

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

During the last two-three decades there was an explosion of published research and technical papers. Many new specialised journals were launched. It seems that researchers around the world gradually adopt the American slogan "publish or perish". The number of papers published each year in scientific journals follows, in most of the subjects, exponential growth curves. In the broad area of the water science this is demonstrated by a huge increase of published papers mainly in the area of water resources management and water quality and treatment.

Although the evaluation of the research work of a scientist should be totally performed by experts in the very narrow field of research within which his work was conducted, there is often the need to evaluate quantitatively the research work using universally accepted practices. In this context it is customary to count the scientific papers which are published in international referred journals. Lately there is a tendency to consider only the number of papers published in the journals of ISI. Regardless the concerns regarding this type of counting, due to the extremely easy access provided by internet, this type of counting seems to receive universal acceptability.

Apart from the number of published papers, there have been attempts to account for the recognition of the work published. The most popular way in this aspect is to count the cumulative number of citations of the research work under review in other scientific papers. Again, due to the easiness in the access to these data, citations in ISI journals are used.

In order to evaluate both the number of published scientific papers and the number of citations in other papers, several indices have been proposed and used, the most popular being the *h*-index. In order to calculate the *h*-index of a scientist you should set his papers in descending order with respect to the number of citations of each paper. Then *h*-index is the rank (integer number) in the descending order having at least the same number of citations as the number representing the rank. The *h*-index is now calculated automatically by certain internet services (e.g. SCOPUS.com for papers published after 1995).

Although *h*-index is very popular between academics, it is very unfair for scientists and papers with an overwhelming recognition. This is to say that the index remains practically the same regardless if a paper has 20 or 200 citations. It is also unfair to scientists with breakthrough research results concentrated in a small number of excellent papers. Last but not least (for small

h-index values) the *h*-index can be biased either by self citations or by "friendly" groups which may intentionally increase the *h*-index.

In this short note we propose a new simple evaluation index, the L-index, which takes into account the number of published papers in international scientific journals (*n*) together with the total number of citations on these papers (*N*). Compared with the *h*-index the L-index is more representative of the entire production of published research and its recognition by the scientific community. The L-index is calculated by multiplying the number of papers times the logarithm (base 10) of the average number of citations per paper published and rounded to the nearest integer number. That is:

$$\text{L-index} = \left[n \cdot \log \frac{N}{n} \right]$$

For example, if the number of papers $n = 20$ and the number of citations $N = 100$, then $\text{L-index} = 20 \cdot \log \frac{100}{20} = 13.97$ or 14. The L-index is

calculated this way if $\frac{N}{n} > 1$. For the vast majority of

cases analysed, the above simple equation proved applicable. Only in some exceptional cases L-index could not be calculated by the above equation mainly because the $\frac{N}{n}$ was not greater than 1. In this case $\left(\frac{N}{n} \leq 1 \right)$,

the L-index is the maximum integer number which can be obtained by omission of papers with low or zero number of citations. Obviously, if no citations exist or if after any omission of papers the quantity in the logarithm remains ≤ 1 , then L-index is set to zero.

In Figures 1 and 2 an example is presented for the case of $\frac{N}{n} \leq 1$. Let the number of citations of the papers in

descending order be as presented in Figure 1 (total number of papers $n = 20$, total number of citations $N = 20$). Then the number of papers which are fully considered for the calculation of the L-index is shown in Figure 2. The result is that L-index is 3 and the number of papers considered for the calculation is between 4 and 12 out of the total number which is 20.

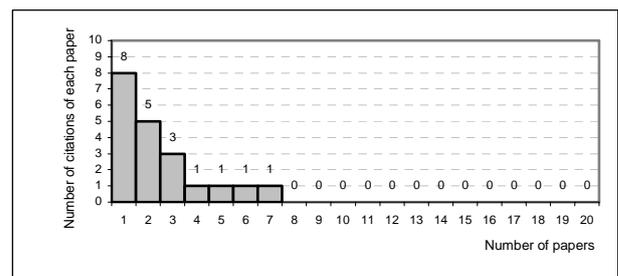


Figure 1: Number of citations of each paper

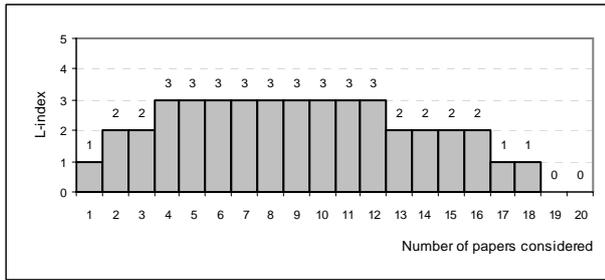


Figure 2: L-index in relation to the number of papers considered

Due to the limitation of space, this short note was written only to present the new index. Further discussion and examples can be offered after the response from the scientists who are eager to use this index. The L-index is open to all the scientists and particularly to the members of the European Water Resources Association for comments and recommendations. However, it should not be forgotten that the entire published work includes not only the published papers in the ISI journals, but also in other important refereed journals, proceedings of conferences and symposia and chapters in books which should be also considered in the evaluation and are not covered by the procedure presented above.

EWRA 7th International Conference

The European Water Resources Association’s (EWRA) 7th International Conference on “Water Resources Conservancy and Risk Reduction under Climatic Instability” to be held in Limassol, Cyprus (25 - 27 June 2009).

The Conference will provide an international forum for the exchange of scientific information and knowledge-sharing on state-of-the-art research efforts and contemporary water-related issues, on a multitude of thematic areas such as water management and technologies, macro-engineering and environmental governance, proactive planning and crisis management, sustainable development, urban water supply systems, water losses, water shortage and water reuse, water pollution, and risk assessment. The Conference Host and Chair is Dr. Symeon Christodoulou. Further information can be found at the conference’s website:

<http://www.eng.ucy.ac.cy/EWRA2009>
or
<http://www.ewra.net>

International Symposium: Water Shortage Management

The International Symposium “Water Shortage Management” was held in Athens (Greece) on the 20th

of June 2008. The symposium was organized in the framework of the European project PRODIM (Proactive Management of Water Systems to Face Drought and Water Scarcity in Islands and Coastal Areas of the Mediterranean). PRODIM is an INTERREG IIIB/ARCHIMED project in which 10 partners from Greece, Italy, Malta and Cyprus participated. The Lead Partner of the project is the Centre for the Assessment of Natural Hazards and Proactive Planning of the Technical University of Athens (NTUA).

Presenters and attendees from Greece, Italy, Malta and Cyprus participated. Also Officials from Water Resources organisations participated in the Symposium. The Proceedings volume includes papers presented in the Symposium and to a large extent reproduces the opinions and the work developed during the implementation of the project PRODIM. This volume will be useful not only to those involved with the research and technological development in the area of water scarcity, but also to decision makers, institutions and stakeholders who search for knowledge related to these complicated phenomena.

Chinese - European meeting

EWRA’s President Prof. G. Tsakiris participated the Chinese - European meeting which was held in Athens on the 17th of March 2009.

The meeting was organised by the Greek-Chinese Association of Cultural and Economic Relations and the Ministry of Water Resources of the People’s Republic of China.



The main aim of the visit of the Chinese Delegation was to promote collaboration in the areas of hydraulics, water resources and environmental protection in an attempt to establish joint ventures in the future.

During the meeting Prof. G. Tsakiris established a friendly relationship with members of the Chinese delegation for developing further cooperation opportunities between EWRA and Water Resources Organizations of China.

General Assembly of EWRA 2009

The General Assembly of EWRA will take place in Limassol (Cyprus) on the 25th of June 2009 during the 7th International Conference of EWRA.

The main topics for discussion in the GA will be:

1. Preparation of EWRA for participating in the Copenhagen Summit
2. Reorganisation of EWRA/Amendments in the statistics
3. New Initiatives (Working Groups, Services)
4. New Journals and publications of EWRA
5. Evaluation of scientific research

The keynote speech for developing the proposals of EWRA towards the Copenhagen summit will be delivered by Prof. N. Dalezios (Univ. of Thessaly, Greece).

Further the venue of the next Symposium (2011) and Conference (2013) will be decided.

Finally the GA will vote for the new EC of EWRA for the next term in office.

Euro-Mediterranean Water Directors Conference

The Conference of the Euro-Mediterranean Water Directors took place in Athens on 21st July 2008. France officially handed to Italy the Presidency of the steering Committee of the EuroMediterranean Water Information Systems (EMWIS). EMWIS is an initiative of the Euro-Mediterranean Partnership. It provides a strategic tool for exchanging knowledge and information in the water sector between and within the 27 EU member states and the 10 Mediterranean Partner Countries (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, Syria, Tunisia and Turkey).

MELIA: MEditerranean diaLOGue for Integrated water management

MELIA is a program selected by the European Union within its 6th FPRD. It gathers 45 participants (universities, non-governmental organizations, public authorities, etc) from 16 Member and non-Member States of the European Union. MELIA is using the regulations of the European Water Framework Directive (WFD) in order to harmonize water management policies in the Mediterranean Basin. The MELIA objective is to evaluate the methods for Integrated Water Resources Management in the Mediterranean countries, to develop awareness on social, technical and economic issues related to water management, to provide indicators to implement the benchmarking of IWRM, to support sustainable water policies and to propose participation mechanisms to avoid competition between the regions and the various water users.

World Water Forum in Istanbul

World Water Forum has been held in Istanbul (Turkey) on 20 and 21 March 2009. The five official sessions have been organized by the International Network of Basin Organizations (INBO) and UNESCO covering topics of basin management and transboundary cooperation. More than 200 papers were received on the Forum. For more information visit the website: www/inbo-news.org

Water Requirements for Irrigation and the Environment

M.G. Bos, R.A.L. Kselik, R.G. Allen, D. Molden

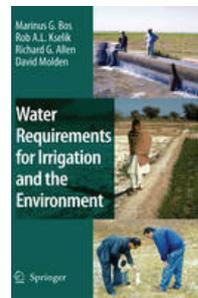
Publication Year: 2008

Published by: Springer Verlag

ISBN: 1402089473

Binding: Hardback

Pages: 190



This title discusses all components of the water balance of an irrigated area; evapotranspiration, effective precipitation and capillary rise from the ground-water table, water management strategy that balances actual evapotranspiration (and thus crop yield) with the groundwater balance of the irrigated area (for a sustainable environment). Also it includes a simulation program (CRIWAR 3.0) that combines all water balance components into a single simulation procedure. The use of the CRIWAR software for developing water requirement tables is described in the book. This software version greatly expands upon the capabilities of previously published programs. Many irrigation projects, however, use (divert or withdraw) much more water than consumed by the crop. The non-consumed fraction of the water may cause a variety of undesirable effects ranging from water-logging and salinity within the irrigated area to downstream water pollution.

Drinking Water Quality

N. F. Gray

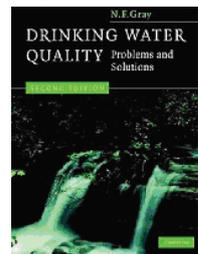
Publication Year: 2008

Published by: Cambridge University Press

ISBN: 052187825X

Binding: Hardback

Pages: 536



This textbook provides a comprehensive review of the problems associated with the supply of drinking water in the developed world. This book includes the WHO Revised Drinking Water Guidelines and an overview of the current and emerging problems with potential solutions. It is an ideal textbook for courses in hydrology, environmental health, water resources management, aqueous geochemistry, environmental science and environmental engineering; it also provides an authoritative reference for practitioners and professionals in the water supply industry.

EWRA 7th International Conference: Welcome Note

S.E. Christodoulou
Conference Host and Chair

Nowadays, amidst global climatic change, extended periods of drought, heightened demand of water and increased urbanization, the development and application of scientific knowledge and integrated water resources management policies for sustainable management of water resources is of paramount importance not only to national governments but also to transnational networks. Such scientific knowledge and policies should cover a myriad of issues related to water, such as water scarcity and conservancy, climate change and their effects on water, drought and floods, water quality, water recycling, water loss, wastewater treatment, commodification of water, water pricing, etc.

The following sections discuss most of the aforementioned important components of sustainable management of water resources, as presented at EWRA's Seventh International Conference titled "Water Resources Conservancy and Risk Reduction Under Climatic Instability".

The conference aims to provide an international forum for the exchange of scientific information and knowledge-sharing on state-of-the-art research efforts and on contemporary water-related issues, on a multitude of thematic areas such as water management and technologies, macro-engineering and environmental governance, proactive planning and crisis management, sustainable development, urban water supply systems,

water losses, water shortage and water reuse, water pollution, climate change, and IWRM.

The work presented and included in the conference proceedings constitutes an excellent blending of cutting-edge research, of scientific and applied knowledge, and of case-studies across the globe which should be of great interest to both researchers and practitioners since it offers the European and the international community of water professionals at large a great opportunity to experience the latest achievements in water-related research, science, practice and management.

This great experience starts with your participation in a state-of-the-art technical programme and culminates in a unique opportunity to, not only immerse yourself in cutting-edge water-related science, but also to engage other professionals in discussions, possible collaborations and future scientific endeavors for the advancement of knowledge in water resources.

Finally, a great venue and an even greater host-city can only add value to the conference and guarantee the success and fun of it. We are definite that the city and the people of Limassol will make this a memorable experience to all participants and we invite you all to take full advantage of country's historical, cultural, urban and tourist assets. Conference delegates, family and friends alike should take advantage of the great opportunities the city provides and the ideal weather conditions to not only enjoy the sun and the sandy beaches of Limassol, but to also experience the full range of activities and excursions in Cyprus.

For all the above reasons and many more, we warmly invite you to Limassol, Cyprus, for EWRA's 7th International Conference and wish you the best and most memorable stay.

European Water Resources Association | Publications

Journals



Water Resources Management
- starting date: 1987
- schedule: 15 issues per year

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

Macro-engineering & environmental governance
- first volume 2009
- schedule: 1 volume per year

Proceedings of Conferences and Symposia

