European Territorial Cooperation Programme
Greece - Italy
2007-2013

INVESTING IN OUR FUTURE
Co-funded by the European Union (ERDF)
and by National Funds of Greece & Italy

Efficient Irrigation Management Tools for Agricultural Cultivations and Urban Landscapes

IRMA

WP2, Action 2.2, Deliverable 1

Open international conference (Greece), theme: "Efficient Irrigation Management Tools for Agricultural Cultivations and Urban Landscapes"

Scientific Support of Conference in Greece

www.irrigation-management.eu

IRMA info

European Territorial Cooperation Programmes (ETCP)

GREECE-ITALY 2007-2013

www.greece-italy.eu

Efficient Irrigation Management Tools for Agricultural Cultivations and Urban Landscapes (IRMA)

www.irrigation-management.eu

IRMA partners

Technological Educational Institution of Epirus (LP, Lead Partner, TEIEP)

http://www.teiep.gr, http://research.teiep.gr

http://fla.teiep.gr (Hydroconcept R&D team)

Olympiaki S.A., Development Enterprise of the Region of Western Greece (P2, AEPDE)

http://www.aepde.gr

Instituto Nazionale di Economia Agraria (P3, INEA)

http://www.inea.it

Consiglio Nazionale delle Ricerche - Istituto di Scienze delle Produzioni Alimentari (P4, ISPA-CNR)

http://www.ispa.cnr.it/

Regione di Puglia (P5, ROP)

http://www.regione.puglia.it

Decentralised Administration of Epirus–Western Macedonia (P6, ROEDM)

http://www.apdhp-dm.gov.gr

WP2, Action 2.2, Deliverable 1

Open international conference (Greece), theme: "Efficient Irrigation Management Tools for Agricultural Cultivations and Urban Landscapes"

Involved partners:

Technological Educational Institute of Epirus (LP)

Team:

Dr. Barouchas P., Dr. Malamos N.

Mrs. Baltzoi P., Mrs. Fotia K.

Dr. Tsirogiannis I.L.

Dr. Varras Gr., Dr. Karras G.

Place and time:

Arta, 2014

European Territorial Cooperation Programme Greece - Italy 2007-2013

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GREECE-ITALY 2007-2013

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Acknowledgements

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Introduction and basic objectives

"Efficient Irrigation Management Tools for Agricultural Cultivations and Urban Landscapes (IRMA)" project which is financed in the framework of the European Territorial Cooperation Programmes (ETCP), GREECE-ITALY 2007-2013 (http://www.irrigation-management.eu/) has been launched in April 2013.

Two international conferences have been planed in the framework of IRMA. They have been scheduled for the end of 2014 and the middle of 2015. As would be difficult to organize two similar high level conferences in very short time distance between each other, during the project's kickoff meeting it was decided that the two conferences will have different main themes which will form a complete reference to the objectives of IRMA project. The conference in Greece was decided to be focused on the relation between irrigation – drainage and landscape while the conference in Italy will be focused in irrigation and drainage in the Mediterranean region. As the conferences will also include a number of parallel events, other deliverables of WP2, like workshops, professional training, visit to experimental farms etc could be scheduled for the same period.

In every case irrigation and drainage scientists and stakeholders from various countries, without the limitation of areas that are included in the programme area were expected to participate. In order to preserve the territorial cooperation character of the programme, presentations that are related to IRMA project area of interest (Region of Puglia in Italy and Region of Epirus and Region of Western Greece in Greece) or concern theories, models, applications etc that have the potential to be adopted in these areas would be of preference.

The Development Agency of Western Greece Region S.A. of Local Government-Olympiaki S.A. (http://www.aedpe.gr) would be responsible for the organisation, while the Technological Educational Institution (TEIEP) of Epirus (http://www.teiep.gr) would have the scientific responsibility regarding the event.

Conceptual issues

In this framework, the 1st International Symposium on Efficient Irrigation Management and its Effects on Urban and Rural Landscapes (IRLA 2014 -from IRrigation LAndscape-) was decided to be organised at the end of 2014, at Patras, Greece.

The symposium was designed as to highlight the effects of irrigation (the most significant water consumer) and drainage to rural and urban landscapes and drainage to rural and urban landscapes. Irrigation and drainage changed the route of human history and in many cases completely reformed the landscape. Irrigation structures, transformation of swamps and arid (even desert) land to cultivated land through land reclamation projects contributed to the agricultural revolution. Additionally, irrigation systems, made urban environments more hospitable and allowed for parks and leisure setups to provide convenient and pleasant places for athletic activities, vacations etc.

At the other hand, water bodies drainage or route change, big constructions like, dams and open irrigation networks, excessive and inefficient irrigation along with fertilisation, uncontrolled over

pumping, etc are responsible for landscape downgrading, sea water invasion in groundwater, change in microclimate, eutrophication of water bodies, desertification etc. All these must be confronted in the framework of climate change and water deficiency.

The main questions of IRLA2014 were how we can we keep agricultural land productive, in a sustainable for the landscape way? and how urban and leisure landscapes can maintain their character and positive effects to human population while high quality water consumption for irrigation is significantly reduced?

In order to contribute to the solution of these issues, irrigation stakeholders, public administration authorities, academic-research institutions, NGO's that are active in the field of irrigation and drainage management must cooperate.

IRLA2014 was expected to provide a unique platform for discussion of these issues. The event will generate debate and ideas about how to achieve irrigation and drainage efficiency, water conservation, balance between irrigated agriculture needs and landscape sustainability and ways for designing water efficient urban and leisure landscapes.

Contributions and themes

The symposium invited submissions of research papers, posters and project presentations, on fully-developed results, on-going work or innovative concepts related to efficient approaches for irrigation and drainage in agricultural landscapes and green projects in urban areas.

Both paper and poster presentations which address the risks, challenges, opportunities and solutions on one or more of the following thematic areas were welcomed:

- The application and impact of irrigation and drainage in urban, rural and maritime landscapes (desertification, lakes drainage, rivers routes, eutrophication, landscape formation (for example for surface irrigation), water table lowering, groundwater salinisation and pollution, soil downgrade, converting desert to productive land, sea pollution etc).

- Sustainable management/maintenance/practices in landscape and urban horticulture irrigation (control technologies, xeriscaping, alternative water resources for irrigation (recycled, gray, saline, rain), urban landscapes' water requirements, EU and national standards, EU, state and municipal water use policies etc)

- Research/teaching/extension/consultancy in agricultural and urban irrigation.

- Relevant Projects presentation (special section).

Papers that discuss the following special topics were also welcomed:

- Ancient technologies associated with irrigation and drainage

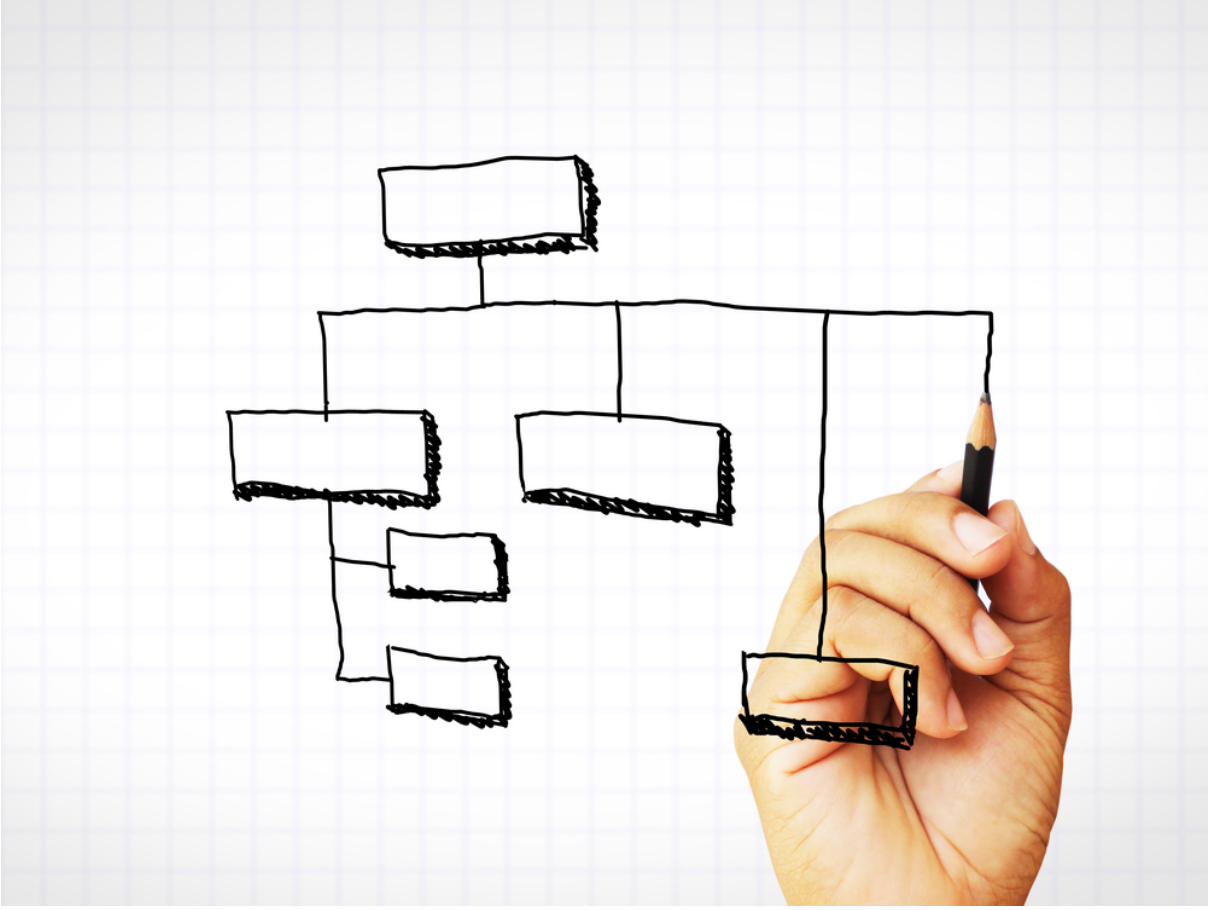
- Turfgrass and the environment – Urban and tourist and leisure green projects, golf links etc.
- Skills acquisition, certification and career opportunities in agricultural and urban irrigation and drainage.

Additionally, relevant projects presentations would be hosted in a special section of the symposium.

The future of IRLA

The perspective of IRMA project was to seed the idea of a scientific and development event that will discuss the connection between irrigation, drainage and the landscape. IRLA initiated a dialogue that we hope to be continued as a stand-alone event or better as part of bigger event.

Planning / Specifications



Location

As it is written in the Application Form of IRMA the symposium will be held at the city of Patras.

Patras (Patra) is the capital city of the Region of Western Greece. Its harbor links Greece to Italy. The Rio-Antirio bridge connects Patras' easternmost suburb of Rio to the town of Antirrio, connecting the Peloponnese peninsula with mainland Greece.

The Patras City Area has a population of 160.400 people, while suburbs, which are included in Patras municipality, has a population of 213,984 (in 2011). It is a place where entertainment, history and culture mingle together to create a destination full of wonderful discoveries.

The city has two public universities and one Technological Institute, hosting a large academic population and rendering Patras a major scientific centre.

Venue

IRLA2014 is proposed to be held in a appropriate conference center at the centre of the city of Patras, close to the public transportation means (bus, train, ship) and no more than 5-10 minutes walking distance from hotels of various categories with total capacity of at least 150 rooms.

The venue should provide:

- at least 5 separate rooms from which one should have a capacity of 240 seats, two should have a capacity of more than 120 seats, and the others more than 50 seats. The rooms should have the capability to be merged or divided in case of changes of the scientific program
- spaces for break time between sessions with a capability of 400 standing up persons and lunch restaurant with a capability of 200 seated persons or 400 standing up persons
- ample meeting spaces for secretarial support.

A specialized in conferences company should be hired in order to provide organizational services.

Date

26, 27 and 28 November 2014

Language

The official language of IRLA2014 will be English.

A number of salutation speeches at the opening and the closing session are expected to be made in Greek or in Italian, thus translation from these languages to English should be available.

Logo

The logo of IRLA 2014 comes from the 1522 edition of Virtruvius' De Architectura, by Fra Gioconda.

It is the Archimedes screw, an invention to pump water. Archimedes was an ancient Greek which lived in Syracuse (Italy).

Conference site

A dedicated to IRLA2014 site has already developed in the framework of the general IRMA site using Joomla 2.5 CMS, it is already available at: http://irla2014.irrigation-management.eu

This has been done by TEIEP, during the very first steps of the event organisation as the dissemination of relevant information for the selected for the event level, typically starts at least one year before.

Abstract and Paper Submission

Accepted (after review process) contributions will be presented at the symposium and will be included in the official conference proceedings volume, and distributed to all conference participants as well as internationally. They will also be available through the symposium web site.

Guidelines and requirements and templates will follow internationally applied rules. Probable the guidelines of the International Society of Horticulture Scientists (ISHS, www.ishs.org) will be adopted.

The proceedings of IRLA2014 with all the accepted and registered papers of the conferences will be sent for indexing to: ISI (Thomson Reuters), ELSEVIER, SCOPUS, British Library, EBSCO, SWETS, EMBASE, CAS - American Chemical Society, EI Compendex, Engineering Village, DoPP, GEOBASE, Biobase, TIB|UB - German National Library of Science and Technology, American Mathematical Society (AMS), Inspec - The IET, Ulrich's International Periodicals Directory.

The organizing committee proposed that the proceeding should be published be a specialized scientific publisher with worldwide acceptance. This will enhance the interest of high level scientists to participate in IRLA2014 and of course the dissemination of the results.

Electronic posters

Regarding poster presentations, the alternative of electronic presentations using 5-10 HD monitors or TV screens proposed. These devices should have a minimum dimension of 32'', should be placed on walls in either portrait or landscape orientation and be able to read files of pdf, ppt, pps etc formats and play slide shows of images with typical formats (bmp, jpg, tif etc) and videos (avi, flv, mpg, etc).

Registration, abstracts and papers submission handling

A number of relevant tools were evaluated and the free to use Microsoft's Conference Management Toolkit was finally selected.

VISA issues

A VISA letter will be provided to all applicants that are:

- members of the organising or the scientific committees,

- keynote and invited speakers and
- presenters that have submitted an abstract for oral or poster presentation that have been approved.

Promotion

IRLA2014 will be promoted in local and international electronic and printed media. Other alternative ways of promotion include:

- The Universities' Erasmus offices
- The relevant COST actions members
- The mailing lists, the sites and the newsletters of support organisations

Organization roadmap

As the preparation of a high level international scientific event needs more than one year to be organized and most interested people want to be sure about the event's dates in order to make their schedules, the organizing committee has decided the following milestones for IRLA2014:

1. Check for relevant conferences which have been scheduled for 2013-2015 (ISHS, European Irrigation Association, EurAgeng etc) (before the end of June, 2013)
2. Formation of brief description documents / organizational program (before the end of June, 2013)
3. Submit proposals for support and cooperation to international and national organizations (before the end of July, 2013)
4. Get in touch wit key persons for support and formation of the scientific committees
5. Search for relevant scientists through references, creation of mailing lists[1]
6. Selection of convenors
7. Formation of the organizational and scientific committees and draft organizational program (before the end of September 2013)
8. Parallel events organization (technical visits, workshops, seminars, trade shows, national scientific societies conferences etc)
9. Call for external experts
10. Conference site (before the end of October 2013)
11. 1st announcement (before the end of November 2013)
12. Keynote speakers selection
13. 2nd announcement
14. Organizational details (accommodation, program for accompanying persons, unofficially linked sponsored events etc)
15. Call for abstracts, Registration period opening, Organization of reviewers
16. Submission of final papers, Final reviews (September - December 2014)
17. Final details

[1] Form tools: Google Docs / Forms, http://www.zoho.com/creator/online-form-builder/index.html?utm_source=Zoho_Form_Embed&utm_medium=form_footer&utm_campaign=ZohoAds etc

18. Symposium materialization (November 2014)

19. Follow up activities - Publication of proceedings (up to February 2015)

Realization

Convenors and Committees

Convenors

The convenors of IRLA2014 were the following:

1. **Dr. Pantelis E. Barouchas**. He works as senior lecturer in the Department of Agricultural Technology – Technological Educational Institute Western Greece. He holds a diploma from the Department of Natural Resources Management and Agricultural Engineering of the Agricultural University of Athens, an M.Sc. in the same department with specialization "Natural Resources – Environmental Management" and a Ph.D. again from the Agricultural University of Athens. He worked in the private and public sector, providing consultancy services in applied soil science, plant nutrition, fertilization and analysis of soil samples and plant tissues with modern techniques. He also has rich experience in research projects. His research activity is focused on Closed Drainage Systems – Soil Genesis and Problematic Soils.

2. **Dr. Yannis L. Tsirogiannis**. He works as a full time Ass. Professor at the Technological Educational Institute of Epirus (TEIEP), Faculty of Agricultural Technology, Dept. Floriculture – Landscape Architecture (FLA). He represents TEIEP at UNISCAPE, the European Network of Universities for the implementation of the European Landscape Convention). His research interests include effects of irrigation and drainage on landscapes, ancient and post industrial water-motion machines, CAD/CAE and GIS design systems for landscape projects. During the last 10 years he has participated in more than 10 R&D projects, in 15 publications in international peer reviewed scientific journals and in more than 20 contributions to international and national conferences.

3. **Dr. Nicolaos Malamos**. He works as a lecturer in the Department of Mechanical Engineering and Water Resources – Technological Educational Institute Western Greece. He holds a PhD from the Department of Land Reclamation and Agricultural Engineering of the Agricultural University of Athens. He worked for almost 10 years in irrigation management administration in the public sector. He has significant research experience. His main research interests include mathematical simulation and analysis of water resource systems (with emphasis on agricultural uses), soil-water movement, soil-water-plants-atmosphere relationships, water resources management, irrigation techniques and hydroinformatics.

Organizing Committee

The convenors, members of IRMA partners teams as well as water, irrigation and drainage scientists were invited to participate at the organising committee. The main responsibilities of this committee are: Program Chair, Tutorials Chair, Special Sessions Chair, Local Organizing Chair, Publication Chair, Publicity Chair, International Liaisons.

Up to now the members of the organising committee are the following (A-Z order):

1. Baltzoi Penelopi, MSc (TEIEP, Greece)
2. Barouchas Pantelis, PhD (TEIWG, Greece)
3. Chalkides Heraklis, PhD (UTH, Greece)
4. Fillis Evangelos (ROEDM, Greece)
5. Frezouli Ermioni (MedSos, Greece)
6. Goltsiou Katerina, PhD (Agrodesign / Greece)
7. Karras George, PhD (TEIEP, Greece)
8. Malamos Nicolaos, PhD (TEIWG, Greece)
9. Maretas Demetrios, MSc (TEIEP, Greece)
10. Markantonakos Xenofon, PhD (ROEDM, Greece)
11. Mathioudakis Georgios, MSc (LivingScapes, Greece)
12. Monokrousou Klio (MedSos, Greece)
13. Montessano Francesco (ISPA-CNR, Italy)
14. Paraskevopoulos Panagiotis, MSc (AEPDE, Greece)
15. Stogiannos Michalis (PEEGEP, Greece)
16. Tessa Goodman, MSc (Uniscape, Italy)
17. Thymakis Nicolaos (ESEFI, Greece)
18. Tsirogiannis Ioannis, PhD (TEIEP, Greece)
19. Varras Gregorios, PhD (TEIEP, Greece)

Scientific Committee

The organising committee has invited about 400 selected scientists from all over the world to participate in the scientific committee of IRLA2014.

Up to now the confirmed members of the scientific committee are the following (A-Z order):

1. Abdel-Shafy Hussein I., Prof., PhD (NRC, Egypt)
2. Abubaker Samih M., Phd (BAU, Jordan)
3. Aggelis Konstantinos, PhD (TEIEP / Greece)
4. Alexandridis Thomas, PhD (AUTH / Greece)
5. Andreopoulou S. Zacharoula, PhD (AUTH / Greece)
6. Arabatzis Garyfallos, PhD., (DUTH / Greece)
7. Argaman Eli, PhD (MOAG, Israel)
8. Argyrokastritis Ioannis, Asoc. Prof., (AUA/Greece)
9. Avramidis Pavlos, PhD (TEIWG / Greece)
10. BaHammam O. S., Prof., PhD (KSU, Saudi Arabia)
11. Baltas Evaggelos, PhD., (NTUA / Greece)
12. Barbagiannis Nikolaos, Prof., PhD (AUTH/ Greece)
13. Barelos Demetrios, MSc (CBA / Greece)
14. Barouchas Pantelis, PhD (TEIWG / Greece)
15. Batzios Christos, Prof., PhD (AUTH / Greece)
16. Bekiari Vlasoula, PhD (TEIWG / Greece)
17. Bochtis Dionisios, PhD (AU, Denmark)
18. Bonati Guido, PhD (INEA, Italy)
19. Bournaris Thomas, PhD (AUTH / Greece)
20. Cabrera Raúl I., PhD (TAMU, USA)
21. Carmelo Dazzi, Prof., PhD (ESSC, Italy)
22. Chalkides Heraklis, PhD (UTH / Greece)
23. Chantal Aspe, PhD (UniMars / France)
24. Chartzoulakis Konstantinos, PhD (NAGREF, Greece)
25. Dalamagas Christos, MSc (Fluidra / Spain)
26. Davidson Michael, PhD (UniCl / United States)
27. Díaz-Espejo Antonio, PhD (IRNAS-CSIC, Spain)
28. Dökmen Funda, PhD (KOCAELI, Turkey)
29. Fernández José Enrique, PhD (IRNAS-CSIC, Spain)
30. Filintas Agathos T., PhD (UoA, Greece)
31. Georgiou Pantazis, PhD (AUTH / Greece)
32. Gizas Georgios, Prof., PhD (TEIEP/ Greece)
33. Gotsis Demetrios, Msc, (NTUA / Greece)
34. Hajabbasi Mohammad Ali, Prof., PhD (IUT/ Iran)

35. Hidayat Pawitan, Prof., PhD (BAU, Indonesia)
36. Ioannou Konstantinos, PhD (TEIKAV / Greece)
37. Jenhani Wahid, PhD (AEK, Tunisia)
38. Julia Georgi,PhD (UNEA / Cyprus)
39. Karacsonyi Zoltan, PhD (UoD, Hungary)
40. Karpouzos Demetrios, PhD (AUTH / Greece)
41. Karras Georgios, PhD (TEIEP / Greece)
42. Kantartzis Alexandros, Prof., PhD (TEIEP / Greece)
43. Katsalirou Eirini, PhD (TEIION / Greece)
44. Katsifarakis Konstantinos, Prof., PhD (AUTH / Greece)
45. Katsoulas Nicolaos, PhD (UTH / Greece)
46. Kenichi Hashimoto, PhD (9StepsJapon / Japan)
47. Kittas Constantinos, Prof., PhD (UTH / Greece)
48. Kokkora Maria, PhD (TEITHESSALY / Greece)
49. Kostopoulou Sofia, PhD (AUTH / Greece)
50. Koutsogiannis Demetrios, Prof., PhD (NTUA / Greece)
51. Lazarova Valentina (Suez-Env, France)
52. Leszek Hejduk, PhD (SGGW / Poland)
53. Loukas Athanasios, Prof., PhD (UTH / Greece)
54. Luigi Scarmagio, PhD (ROP, Italy)
55. Malamos Nicolaos, PhD (TEIWG / Greece)
56. Malisiovas Nicolaos, Emer. Prof., PhD (TEIEP / Greece)
57. Mamasis Nicolaos, PhD (NTUA / Greece)
58. Manos Basil, Prof., PhD (AUTH / Greece)
59. Manos Georgios, Prof., PhD (TEIEP/ Greece)
60. Markantonakos Xenofon, PhD (ROEDM, Greece)
61. Martínez Fernández Julia, PhD (UM, Spain)
62. Mathias Neumann Andersen, Prof., PhD (AU / Denmark)
63. Matsi Theodora, PhD (AUTH / Greece)
64. Michailidis Anastasios, PhD (AUTH / Greece)
65. Miklanek Pavol, PhD (SavBa, Slovakia)
66. Minelli Alberto, PhD (UniBo, Italy)
67. Mironidis Demetrios, PhD (AUTH / Greece)
68. Mondher Said, PhD (MA-AP, Tunisia)
69. Moustakas Nicolaos, Prof., PhD (AUA/ Greece)
70. Nagesh Kumar, D, Prof., PhD (IISC, India)
71. Navarro Enrique, PhD (CSIC, Spain)
72. Nektarios Panagiotis A., PhD (AUA, Greece)

73. Nikolarou Chrisoula, Msc (GMOEEC, Greece)
74. Nunzio Romano, Prof., PhD (EurAgEng, Italy)
75. Panagopoulos Andreas, PhD (NAGREF, Greece)
76. Panagopoulos Thomas, PhD (UniAl / Portugal)
77. Panagos Panos, PhD (EC IES, Italy)
78. Papadavid Giorgos, PhD (ARI, Cyprus)
79. Papafotiou Maria, PhD (AUA / Greece)
80. Parente Angelo, PhD (ISPA CNR / Italy)
81. Parisis Konstantinos, Prof., PhD (TEIKOZ / Greece)
82. Partalidou Maria, PhD (AUTH / Greece)
83. Patakas Aggelos, PhD (UniP / Greece)
84. Petrotos Constantinos, PhD (TEITHESSALY / Greece)
85. Proutsos Nikolaos, PhD (ELGO DIMITRA / Greece)
86. Psychoyou Maria Ch., PhD (AUA, Greece)
87. Qureshi Asad Sarwar, PhD (NDC/USAID, Pakistan)
88. Rainer Horn, Prof; PhD (IUSS, Germany)
89. Ragkos Athanasios, PhD (ATEITH / Greece)
90. Reca Cardeña Juan, Prof., PhD (UAL/ Spain)
91. Rossi Guiseppe, Prof., PhD (UNICT / Italy)
92. Salampasis Michail, Prof., PhD (ATEITH / Greece)
93. Salahas Georgios, Prof., PhD (TEIWG/ Greece)
94. Samathrakis Vagis, Prof., PhD (ATEITH / Greece)
95. Savvas Demetrios, PhD (AUA / Greece)
96. Sener Sabri, Prof., PhD (COMU, Turkey)
97. Sevilay Topcu, Prof., PhD (UniCuk / Turkey)
98. Shatanawi Muhammad, Prof., PhD (UniAm / Jordan)
99. Shujie Chen, PhD (ETCAEH, Italy)
100. Slamova Martina, PhD (TUZ, Slovenia)
101. Stavrinos Eleftherios, PhD (HSSS / Greece)
102. Stylios Chrisostomos, PhD (TEIEP / Greece)
103. Teloglou Ilias, Asoc. Prof., PhD (TEITHE / Greece)
104. Theocharis Achilles, (MRDF / Greece)
105. Theocharis Menelaos, PhD (TEIEP / Greece)
106. Theodoridis Alexandros, PhD (AUTH / Greece)
107. Theodosiou Nikolaos, PhD (AUTH / Greece)
108. Todorovic Mladen, PhD (CIHEAM / Italy)
109. Tokmakidis Constantinos, PhD (AUTH / Greece)

110. Tsadilas Christos, PhD (DEMETER-ISMC, Greece)

111. Tsakalidi-Liopa Aglaia, PhD (TEIWG / Greece)

112. Tsakalidis Athanasios, PhD (UPATRAS / Greece)

113. Tsantopoulos Georgios, PhD (DUTH / Greece)

114. Tsekouropoulos George, PhD., (ATEITH / Greece)

115. Tsiourtis Nicolaos, PhD (WDD, Cyprus)

116. Tsirogiannis Ioannis, PhD (TEIEP / Greece)

117. Václav David, PhD (CVUT Prage / Czech)

118. Vanino Silvia, PhD (INEA / Italy)

119. Vantarakis Apostolos, As. Prof., PhD (UPATRAS / Greece)

120. Varras Gregorios, PhD (TEIEP / Greece)

121. Vasakidis Athanasios, Prof., PhD (UOM / Greece)

122. Virlas Panagiotis, PhD (TEITHESSALY / Greece)

123. Vlachopoulou Maro, Prof., PhD (UOM / Greece)

124. Yazar Attila, Prof., PhD (UniCuK / Turkey)

125. Zavraka Despoina, PhD (TEIEMT / Greece)

126. Zissis Thomas, Prof., PhD (AUTH / Greece)

127. Zorica Srdjevic, PhD (UniNS) / Serbia)

Thematic sessions

IRLA2014 calls for submissions of research papers, posters and project presentations, on fully-developed results, on-going work or innovative concepts regarding the sustainable relationship between irrigation and drainage projects and agricultural and urban landscapes.

The symposium thematic sessions are the following:

Thematic Session A: Sustainable irrigation and drainage approaches in the context of agricultural cultivations

Session A1 Technical, environmental, cultural and socio-economic aspects regarding soil, water, plants and landscape in rural areas.

Session A2 Information technology (DSS, DB, ICTs, GIS etc) applications regarding relevant issues.

Thematic Session B: Sustainable irrigation and drainage approaches in the context of urban green infrastructure and landscape architecture projects

Session B1 Technical, environmental, cultural and socio-economic aspects regarding soil, water, plants and landscape in urban and leisure areas.

Session B2 Information technology (DSS, DB, ICTs, GIS etc) applications regarding relevant issues.

Thematic Session C: Irrigation and Drainage Policies and Environmental aspects

Session C1 Strategic design of policies and R&D projects, governance and institutional organisation, implementation of European Directives, operational legislation and standards, water pricing issues etc.

Session C2 Adaptation and mitigation strategies regarding climate change, irrigation technologies and management practices for environmental upgrading, irrigation eco-efficiency and irrigation water footprint, drought and flood risk management etc.

Session C3 Information technology (DSS, DB, ICTs, GIS etc) applications regarding relevant issues.

Number of contributions and participants

723 registered participants from 20 countries around the world

85 oral and poster presentations

14.215 unique visitors to the website

Parallel events

The following parallel events were organised during IRLA2014:

Workshop: The future of sustainable irrigation management in Europe

Organiser: ENORASIS FP7 project (http://www.enorasis.eu/)

Workshop: Soil as seen from irrigation and drainage point of view

Organiser: Hellenic Soil Science Society (HSSS).

R&D Days: Presentation of innovative products and services regarding irrigation and drainage systems design & management

Organiser: IRMA ETCP GR-IT 2007-2013

Open presentation: Developing Agricultural, Food and Environmental Informatics with HAICTA

Organiser: HAICTA

Open presentation: FraoulaBest® - An innovative hydroponic system for strawberry cultivation in Greece

Organiser: Hydroponics.gr

Open presentation: Sensors for irrigation monitoring and management

Organiser: Scientact S.A.

Open presentation: IRRICAD, software for irrigation systems design

Organiser: Netafim (Irricad web site)

Workshop /Public Discussion: Ground water resources for irrigation and relevant water pricing in Greece

Organiser: NGO MedSoS in collaboration with the Greek Union of Young Farmers (PENA)

IRMA project management meeting

Closed event for IRMA project partners and JTS representatives

Technical Visit: Landscape restoration and land reclamation works at Ancient Olympia

Closed event for IRMA project partners and Keynote/invited speakers
Organiser: AEPDE [check: Olympia Restoration Initiative, Olympia archaeologicalsitelympia archaeological site)

Support organisations

A key issue of new conferences, symposia etc is the potential to be repeated and be established as an event which contributes to the dissemination of research findings, presentation of innovation in its sector and cooperation platform for all interested parties. In order to have to potential to succeed in this the organising committee of IRLA2014, decided to ask for support from relevant scientific and professional organisations, NGO's and public authorities. Up to now the following organisations have offered their support:

International organisations

The European Network of Universities especially dedicated to the implementation of the European Landscape Convention.

(UNISCAPE, http://www.uniscape.eu/)

UNISCAPE is the Network of Universities especially dedicated to the implementation of the European Landscape Convention. Aim of UNISCAPE is to support and reinforce interdisciplinary co-operation within and among European universities regarding landscape issues, especially in the areas of research and education. UNISCAPE thereby promotes the principles and the objectives of the Florence Convention (the European Landscape Convention, in force since 2004).

The Commission Internationale de l'Organisation Scientifique du Travail en Agriculture

(CIOSTA, http://ciosta.org/)

Founded in Paris, 1950. CIOSTA aims to develop the agricultural economy with a view to augmenting agricultural production, yield and quality. Safety and ergonomics in agriculture. CIOSTA emphasizes a holistic approach to designing and improving sustainable systems in agriculture and forestry and fosters cooperation among scientists, technicians, advisers and agricultural producers throughout the world.

The European Society for Soil Conservation

(ESSC, http://www.essc.sk/)

The European Society for Soil Conservation (ESSC) was founded on 4th November 1988 to

promote soundly based policies of soil conservation in its broadest sense throughout the countries of Europe. The ESSC is an interdisciplinary, non-political association with more than 500 members in 42 countries. Its members include researchers, teachers, students, farmers, planners and policymakers with interests in agriculture, soil science, geographical science, economics, forestry, ecology. The ESSC pursues its aims by supporting research on soil degradation, soil erosion and soil conservation, providing a network for the exchange of knowledge about soil degradation processes and soil conservation research and practices, producing publications about major questions of soil conservation and consulting administration and policy makers on soil conservation issues

The International Commission of Agricultural and Biosystems Engineering

(CIGR, http://www.cigr.org/)

The International Commission of Agricultural Engineering (CIGR, Commission Internationale du Génie Rural) is an international, non-governmental, non-profit organisation consisting of a network of Regional and National Societies of Agricultural Engineering as well as private and public companies and individuals worldwide. CIGR was created by a Constituent Assembly on the occasion of the first International Congress of Agricultural Engineering, held in Liege, Belgium in 1930.

European Confederation of Agronomists Associations

(CEDIA, http://www.cedia.eu)

CEDIA - the Confederation of European Agronomist Associations - is the umbrella body, which represents professional agronomists associations in Europe.It was founded on 23 June 1987, following an initiative by national agronomists attached to the European Institutions in Brussels. On 13th October 1996 CEDIA became an official non-profit organization. Cedia is primarily interested in the ensuring that mankind has an adequate supply of wholesome and safe food and agri related products through the application of efficient, safe and sustainable methods.

European Irrigation Association

(EIA, http://www.cedia.eu)

The European Irrigation Association is active since 1991. Previously seated in France, the European Irrigation Association is now officially established as an association in Brussels, Belgium since 5 June 2013. The EIA is active on three levels: Norms, standards and tests; Education and Certification and Information and Communication.

Greek National organisations

HELLENIC REPUBLIC
Ministry of Rural Development and Food

The Ministry of Rural Development and Food (http://www.minagric.gr/) works in collaboration with farmers and other stakeholders with a view to promoting sustainable agriculture, food safety and security, the viability of the sector and the prosperity of rural areas in Greece. The ever changing international environment affects our policy making and strategy for agriculture and rural development, taking into account the competitiveness of our products and the restructuring of the countryside.

ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΕΝΕΡΓΕΙΑΣ & ΚΛΙΜΑΤΙΚΗΣ ΑΛΛΑΓΗΣ

The Special Secretariat for Water (Hellenic Republic, Ministry of Environment, Energy and Climate Change, http://www.ypeka.gr/Default.aspx?tabid=246&language=el-GR) is responsible for the development and implementation of all programs related to the protection and management of the water resources of Greece and the coordination of all competent authorities dealing with the aquatic environment. The implementation of the Water Framework and the Marine Strategy Directives as well of the related daughter Directives fall within the scope of the activities of the Secretariat.

The Secretariat in collaboration with the Regional Water Authorities, formulates and, upon approval by the National Council for Water, implements the River Basin Management Plans and the national monitoring program. The Secretariat is composed of four Directorates and is headed by a Special Secretary, appointed by the Ministry of Environment, Energy and Climate Change and the Government.

GSRT
GENERAL SECRETARIAT FOR RESEARCH AND TECHNOLOGY

The General Secretariat for Research & Technology (Hellenic Republic, Ministry of Development, http://www.gsrt.gr/), is the main body responsible for setting research policy priorities and is major direct funder of R&D. Since November 2009 is subject to the Ministry of Education. Moreover, GSRT is responsible for the detailed design, planning, implementation and monitoring of policy interventions (measures, programmes, etc).

ΤΕΕ.Τ.Ε.Ε.
ΓΕΩΤΕΧΝΙΚΟ
ΕΠΙΜΕΛΗΤΗΡΙΟ
ΕΛΛΑΔΑΣ

The Geotechnical Chamber of Greece (http://www.geotee.gr/) is the Greek professional body of 5 major scientific fields: agronomists, foresters, geologists, ichthyologists and veterinarians. It has about 35.000 members and offices all around the country.

ΠΑΣΕΓΕΣ

The Pan-Hellenic Confederation of Unions of Agricultural Co-operatives (PASEGES, http://www.paseges.gr) was established in 1935 as a Private Legal Entity. PASEGES is the leading agency of the country's Agricultural Co-operative Organisations in terms of philosophy and co-ordination, supporting, promoting, boosting their activities and representing them on an international, European and national level.

United Nations
Educational, Scientific and
Cultural Organization

Hellenic
National Commission
for UNESCO

The Hellenic National Commission of UNESCO (http://unesco-hellas.org/) is part of the overall constitutional architecture of the Organization. Set up by the Greek governement in accordance with the Article VII of the UNESCO Constitution, the National Commission operates, on a permanent basis, for the purpose of associating the national governmental and non-governmental bodies in education, sciences, culture and communication with the work of the Organization.

The Greek Society of Agricultural Engineers (http://egme.gr/) was founded in 1993 and is membero or EurAgEng, the European Society of Agricultural Engineers. Its goal is to promote the profession of Agricultural and Biosystems Engineering and the people who serve it.

The Hellenic Soil Society (http://www.edafologiki.gr) aims to advance the discipline and practice of soil science and it fosters the transfer of relevant knowledge. The Society provides information about soils in relation to crop production, environmental quality, ecosystem sustainability, bioremediation, waste management, recycling, and wise land use.

HAICTA (http://www.haicta.gr/) is member of EFITA. The objectives of HAICTA are a) to foster research & development of Information and Communications Technologies for the benefit of

Agriculture, Food Quality and Environment; b) to encourage the adoption of initiatives and organise working groups for the detailed consideration of relevant scientific issues; c) to promote partnership meetings and contacts with other companies in the bio and earth sciences; d) to carry out scientific and educational activities for the development of Information and Communications in bio and earth sciences and e) to contribute to the development of scientific and technical information through conferences and other publications.

The Panhellenic Association of Landscape Contractors (http://www.peegep.gr/) is member of ELCA. Its main goals are a) to enhance the mutual exchange of information and experience among its members; b) to promote the interests of landscape contractors in Greece and c) to support the vocational training of relevant professionals.

MEDITERRANEAN SOS Network (http://medsos.gr/) is a non-profitable, non-governmental organization active since 1990, which comprises of 120 'Full Members' who form its annual General Assembly and approximately 3000 'Supporting Members'. The basic aims of MedSOS are: a) public awareness raising and encouraging changes in citizens' -especially youth- everyday behavior that impact on the environment; b) advocating, lobbying and promoting cooperation among social partners, stakeholders and policy-makers at local, national, regional level; c) promoting active public participation in sustainable development strategies and demonstrating alternative solutions in local communities and d) promoting intercultural exchanges and balanced international cooperation among European - Mediterranean partners.

A number of other organisations have been also contacted and the organising committee waits for their respond.

Greek Local Authorities

The Region of Western Greece and the Municipality of Patras, also supported IRLA2014.

Keynote and Invited Presentations

The organising committee has contacted about 20 distinguished selected scientists from all over the world in order to participate as keynote or invited speakers in IRLA2014.

Keynote speakers

About 20 top level scientists were contacted in order to participate as keynote speakers at IRLA2014. The following 7 honoured the symposium by their presence:

1. **Prof. Juan Manuel Palerm Salazar** is the President of the Uniscape, the Network of Universities especially dedicated to the implementation of the European Landscape Convention. He is Professor of Architectural Project and Landscape Urban Project-Design at the School of Architecture - University of Las Palmas de Gran Canaria (Spain). He is also Director of the Canary Islands Landscape Observatory and Professor and researcher at the University IUAV of Venice and Trento.

2. **Prof. Rainer Horn** is one of the most distinctive soil scientists of our days. He works at the Institute of Plant Nutrition and Soil Science of the Christian Albrechts University zu Kiel, Germany. Among his teaching activites is these at the Graduate School Human Development in Landscapes of the same University. His research interests include stress strain effects in structured soils, soil structure effects, chemical as well as hydraulic processes in structured soils, coupled processes in structured unsaturated soils, waste deposit management capping systems, soil tillage effects on soil properties and functions, chemical and biological aspects of soil aggregates and carbon sequestration. Up to now he has written 18 books and monographs and published 300 papers in refereed international journals. Prof. Rainer is President elected of the International Union Soil Science (IUSS) for the period 2013- 2014.

3. **Dr. Richard L. Snyder** is an Extension Biometeorologist at University of California, Davis from 1980 till present. Dr. Snyder has a M.S. and a Ph.D. in Agricultural Climatology from Iowa State University. His research and teaching activities include: estimating evapotranspiration, freeze protection of crops, irrigation scheduling (agriculture and urban), and water resources planning. Dr. Snyder's Major Accomplishments include: principal Investigator on the California Irrigation Management Information System (CIMIS) project, co-author of the SIMETAW and CUP+ programs, co-author of the UN_FAO book "Frost Protection: fundamentals, practice, and economics", and authored or co-authored 135 refereed papers. The work of Dr. Snyder can be accessed from the following websites: http://lawr.ucdavis.edu/directory_facultypages.php?id=50 and http://biomet.ucdavis.edu

4. **Dr. Bernhard Leinauer** works as Professor and Turfgrass Extension Specialist at the Department of Extension Plant Sciences of New Mexico State University, Las Cruces, New Mexico. His research interests, include irrigation with recycled and/or high saline water and subsequent effects on plant and soil quality, implementation of technologies for monitoring water and salinity in soils and associated stress in plants, mitigation of water repellency in

root zones, screening for low water use, cold and salt tolerant grass species and cultivars and efficient use of irrigation water on turf (e.g. alternative irrigation systems, irrigation scheduling, and modification of turfgrass root zones). He is co-author in more than 40 relevant peer reviewed articles and in more than 100 guides, reports, and abstracts in non-reviewed journals, trade journals, proceedings, and various Extension outlets. His is a greatly requested speaker regarding irrigatio of turfgrass and up to now he has given more than 40 presentations at international scientific and industry meetings.

5. **Dr. Bas Perdoli** is the Director of the Uniscape, the Network of Universities especially dedicated to the implementation of the European Landscape Convention. He works as Associate Professor / Senior Researcher at the Alterra - Spatial knowledge systems / University of Wageningen, the Netherlands. His expertise lies in the field of Land Use Planning and Landscape Ecology.

6. **Dr. Bochtis Dionysios** works as Associate Professor in the Operations Management group of the Department of Engineering, at Aarhus University, Denmark. His primary research is engineering management focused on bio-production including areas of field robots, supply chain management for agrifood and bio-energy bio-recourses, and relative ICT, automation technologies, and Decision Support Systems. He is the author of about 200 articles in peer reviewed journals and conference proceedings including a number of key-note speeches. He is the former presented of CIOSTA (Commission Internationale de l'Organisation Scientifique du Travail en Agriculture) and vice-chair of the Section V (Systems management) of CIGR (International commission of bio-systems engineers).

7. **Mr. Sean Gaule** is currently president of Cedia – the Confederation of European Associations of Agronomists, and a former senior official in the Department of Agriculture, Food and the Marine in Ireland. He has many years experience in agricultural development, to include land Policy, research, production and processing, marketing and rural development. He has an honors degree in Agricultural Science, Master's Degrees in Agricultural Chemistry, specializing in soil science, and an MBA in Public Sector Management; from University College Dublin. He has served as an expert with the European Commission, where he had specific responsibility for programmes in support of the Agri-food sector. He has been Agricultural Counsellor at the Irish Embassy Rome and Permanent Representative to the Rome based UN agencies, FAO, WFP and IFAD. He was a member of the committee on world food security and EU chairman and negotiator at the World Food Summit, as well as being representative to FAO council and various inter governmental committees. He was for several years an Irish Delegate to various meetings of EU Commission and Council, and Irish representative to OECD and UN ECE specialists committees and working groups. He has acted as a World Bank consultant in ASIA and South America. He is a past president of the Irish Agricultural Science Association, and former Director of the North – South Agrilink initiative, and is currently chairman of Gorta, an International NGO, with a particular interest in enhancing the productivity of small holder farmers, and improving food and nutrition, in countries in Sub Saharan Africa.

Invited speakers

The following scientists and irrigation stakeholders were invited to IRLA2014 as their interests were expected to integrate the symposium's presentations.

1. **Dr. Vassilios Stergiopoulos** (Dr. d'Etat, Dr-Ing., D.E.A. de Mecanique des Fluides, Civil Engineer) works as works as Professor at the Department of Civil Engineering Educators School of Pedagogical & Technological Education (ASPETE). Among his scientific interests are small hydropower Plants, hydrodynamic Works, environmental hydraulics and technologies, urban hydraulics, irrigation Systems, fluvial hydraulic mechanics, hydropolitics and geopolitics of water and physical resources. He is considered one of the most significant experts in hydraulic technology of ancient civilizations and has dedicated much of his worked on the study and utilisation of the Archimede's screw.

2. **Mr. Evagellos Koukiasas** is the President of the Board of MEDITERRANEAN SOS (MedSOS) Network. MedSOS, is a non-profitable, non-governmental organization active since 1990, it is registered in the Index of NGOs of the Hellenic Ministry of Foreign Affairs. MedSOS is member of UNEP/MAP NGO partners, European Environmental Bureau (EEB), Mediterranean Information Office (MIO-ECSDE), European Union for Coastal Conservation (EUCC), International Network for Sustainable Energy (INFORSE), Climate Action Network (CAN), National Network of Anna Lindh Euro-Mediterranean Foundation for the Dialogue between Cultures, Euro-Mediterranean Youth Platform and the Water Footprint Network.Among the aims of MedSOS is the active participation in campains regarding the efficient use of water, including irrigation.

3. **Dr. Schalk Jan van Andel** is a senior lecturer in Hydroinformatics at UNESCO-IHE Institute for Water Education, Delft, the Netherlands. He has a background in Hydrology, Computational Hydraulics and Water Management. He has been involved in national and international research projects, like the design of innovative flood reduction measures along the Dutch branches of the Rhine and the development of Earth System Models at the Potsdam-Institut für Klimafolgenforschung (PIK). He specialized in the development and application of hydrologic and hydrodynamic models. At present he is involved in a number of research projects on operational water management, hydrometeorological forecasting and early warning. Case studies include Upper-Blue Nile and Awash rivers in Ethiopia, Ganges river in Bangladesh, Umbeluzi catchment in southern Africa, and through EU FP7 research projects he has been connected to water management studies in Portugal, Greece, and the Netherlands. By developing ensemble prediction methods and researching the proper use of these forecasts for applications in reservoir control, irrigation, and flood forecasting and early warning, he aims to contribute to a wider uptake of probabilistic forecasts for risk-based decision making in water management applications.
4. **Dr. John Triantafilis** is a senior lecturer in Soil Science at the University of New South Wales (UNSW) Australia. He obtained a Bachelor of Science in Agriculture and PhD from the University of Sydney. He specializes in the area of applied geophysics and pertaining to the application of proximal sensing electromagnetic (EM) induction instruments to digital soil mapping (DSM). He has led research projects, like the collection of baseline soil and EM data

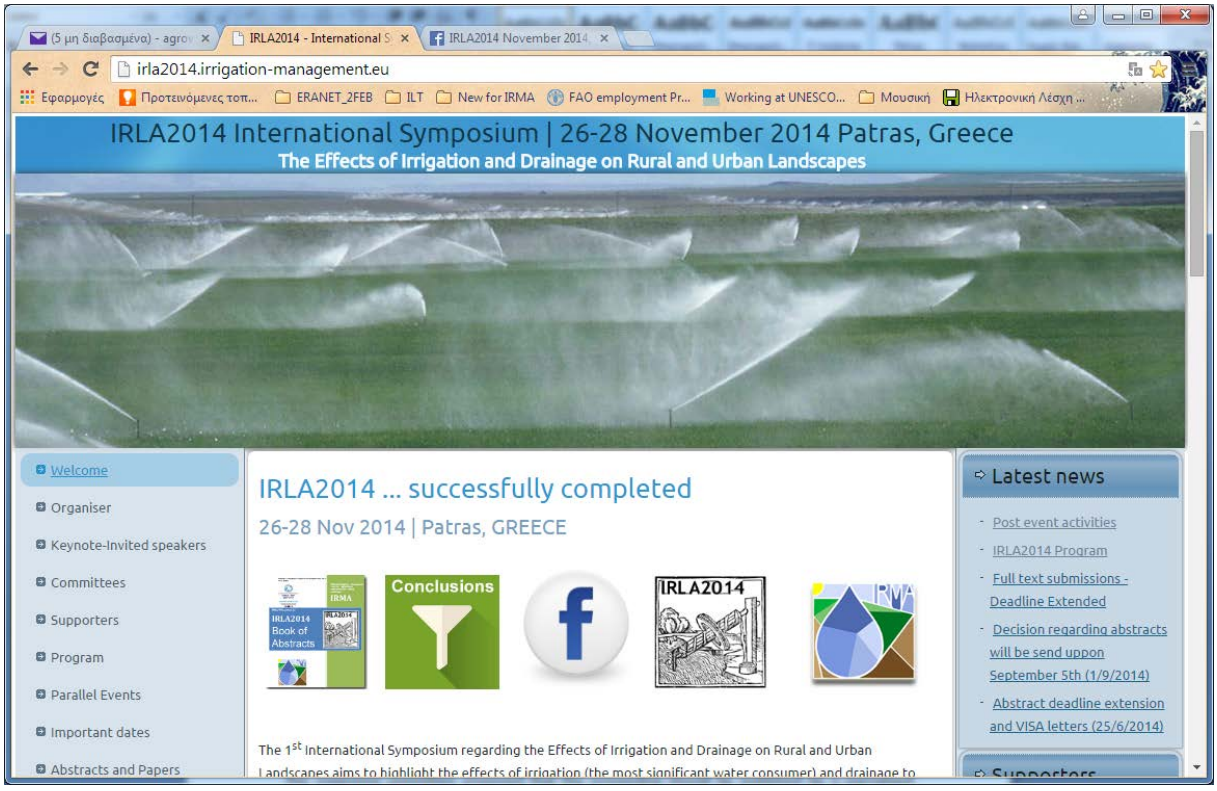
across various irrigated areas in Australia and to develop DSM of various soil physical (e.g. soil texture), chemical (e.g. salinity), stability (e.g. ESP), water (e.g. field capacity) and hydrological (e.g. deep drainage) properties. These DSM have been made available to various stakeholders, including farmers and policy analysts, in a web-GIS called terraGIS (see http://www.terragis.bees.unsw.edu.au/TerraGIS/TerraGIS.html). Recently he has collaborated in the development and application of inversion software (see EMTOMO - http://www.emtomo.com/) to invert EM data collected along single and closely spaced transects. Case studies include three-dimensional: models that infer the location of preferential flow paths of a leachate plume beneath a decommissioned municipal landfill; mapping of soil ESP across an irrigated cotton growing field; regolith modelling of the interaction between paleaochannels and connate salts beneath an irrigated area; and, mapping coastal salinity at the beach/swash zone interface.

5. **Mr. Xatzakis Georgios**, is a Mechanical Engineer and a writer. During the last 10 years he is devoted to the preservation of the irrigation windmills of Lasithi (Crete, Greece). For this he has studied in depth their history, he invented new ways for keeping the sails continuously on, he made numerous lectures and presentations and he wrote the book "The Windpark of Gods. These activities made him candidate for the cultural heritage, Europa Nostra Awards 2014.

Publication of proceedings

The proceedings of IRLA2014 were published by Elsevier B.V. as an issue of Agriculture and Agricultural Science Procedia (http://www.elsevier.com/elsevier-products/procedia, http://www.journals.elsevier.com/agriculture-and-agricultural-science-procedia).

Conclusions



The basic outcomes of IRLA2014 can be summarized in the following:

- Irrigation and drainage have changed the route of human history. Irrigation systems, transformation of swamps and arid (even desert) land to cultivated land through land reclamation projects contributed to the agricultural revolution. In many cases (and an excellent example, that was presented in the symposium, is the case of Lasithi plateau in Greece), irrigation and drainage characterize the landscape. Moreover, irrigation systems have made urban environments more hospitable and allowed for parks and leisure setups to provide convenient and pleasant places for athletic activities, vacations etc.

- On the other hand, surface water bodies drainage or route change, big constructions like dams and open irrigation networks, excessive and inefficient irrigation along with fertilisation, uncontrolled over pumping, etc are responsible for landscape downgrading, sea water invasion in groundwater, change in microclimate, eutrophication of water bodies, desertification etc. All these must be confronted in the framework of climate change and water deficiency.

- It is expected that soon, the combined management of both water for irrigation and soil resources will become obligatory.

- The management of both irrigation and drainage must be handled not only regarding the water sustainability aspects but by applying a holistic framework regarding the management of all factors that constitute the landscape.

- The construction of modern water central irrigation systems with closed pipes which will convey water under pressure, and of systems for recharge of the groundwater is a must for the regions of Western Greece and Epirus (the Greek part of IRMA project area).

Proposals - Generic

- The use of efficient irrigation systems at end-user level must be promoted.

- Meanwhile, modern irrigation management techniques must be adopted and take advantage of the relevant best practices and the numerous available tools. This could lead to direct water savings of up to 50%.

- Farmers and landscape managers, training must include courses regarding efficient irrigation and drainage in the context of both landscape and environmental preservation.

- Also public training sessions for homeowners must also become part of an integrated training approach regarding water and soil best practices.

- A number of initiatives, projects and studies provide solutions for improved irrigation and drainage management in the context of environmental economic and social framework.

- A number of relevant examples have been presented in IRLA2014.

- Interdisciplinary approaches and cooperation between stakholders can probably provide the answer to the “NOW WHAT?” question that was posed during the opening session…

Proposals - Specific for Greece

- Water abstraction zones must be configured and water abstractions must be registered and monitored.

- The operation framework of local water boards in Greece must be updated. These entities must cooperate with irrigation and drainage experts, certified soil and water analysis laboratories, digitize the plans of their networks and the relevant studies and apply modern management systems.

- As a reformation regarding irrigation water pricing is expected for Greece, the participants agreed that at least two pricing levels must be applied, one with the lowest possible price up to the expected water consumption for each cultivation and a high cost one for any exaggeration.

Annex - Image gallery

From the registration

From the opening ceremony

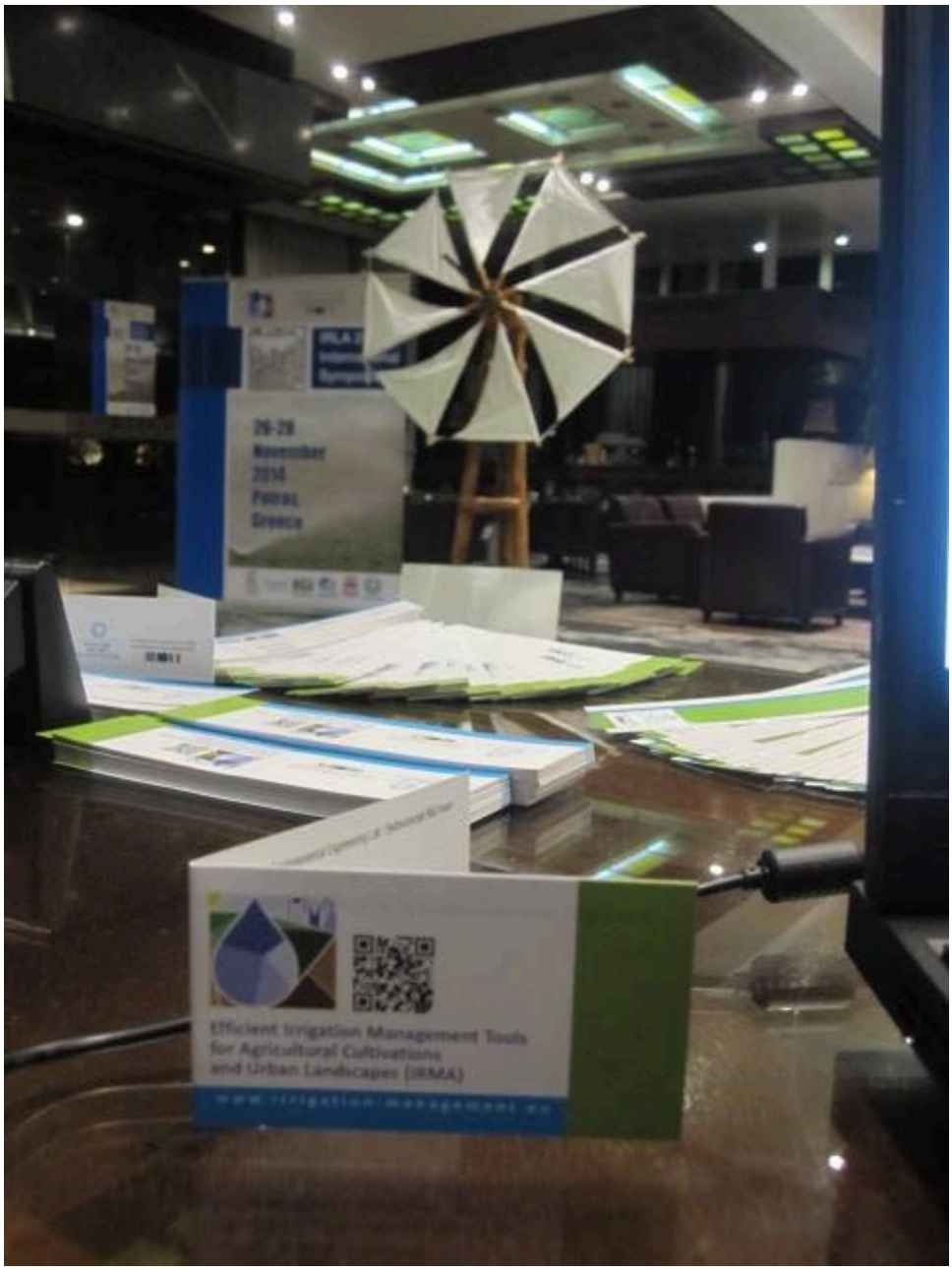
From the keynote speeches (Mr. Sean-Guale, President of CEDIA at the pontium and Dr. R. Snyder, Dr. J. Triantafillis and Dr. B. Leinauer at the chair)

A characteristic oral presentation

From a workshop

Discussion after an electronic poster presentation

During break time


Efficient Irrigation Management Tools
for Agricultural Cultivations
and Urban Landscapes (IRMA)