

WATER CHALLENGES IN XXI CENTURY : ROLE OF ECONOMICS, STATISTICS AND ASSET MANAGEMENT



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sustainability



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Livorno, Italy
11-13 September 2017



ORGANIZING SECRETARIAT

ASTI INCENTIVES & CONGRESSI Srl

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WATER CHALLENGES IN XXI CENTURY: ROLE OF ECONOMICS, STATISTICS AND ASSET MANAGEMENT

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11 SEPTEMBER 2017

09:30 - 10:30 **Registration and Welcome Coffee**

10:30 - 17:30 **Plenary session**

10:30 - 11:00 **Introductory Speeches**

Chair: G. Romano (University of Pisa)

Mayor of Livorno - Filippo Nogarin

Vice Dean of University of Pisa - Marco Gesi

IWA Specialist Group on Economics and Statistics - Guillermo Donoso

Strategic Asset Management IWA Specialist Group - Jaime Gabriel Silva

11:00 - 13:30 **1st Session: WATER GOVERNANCE AND REGULATION**

11:00 - 11:30 *Water governance, regulation and finance* - **H. Leckie** (OECD, Division of Climate, Biodiversity and Water)

11:30 - 12:00 *Scorecards for regulatory governance: watching the watchmen*

R.C. Marques (University of Lisbon)

12:00 - 12:30 *Water services regulation: an Italian renaissance?* - **G. Colarullo** (Utilitalia)

12:30 - 13:30 **Round table and discussion** moderated by **C. Cambini** (Polytechnic University of Turin): **P. Castellarnau** - **G. Colarullo** - **A. Guerrini** - **H. Leckie** - **R.C. Marques**

13:30 - 14:30 **Light Lunch**

14:30 - 16:00 **2nd Session: ASSET MANAGEMENT AND UTILITY BANKABILITY IN EUROPE**

14:30 - 14:50 *Funding Investments in water infrastructure: opportunities and future developments* - **P. Castellarnau** (Water Division, Projects Directorate, European Investment Bank)

14:50 - 15:10 *Advisory services under the European Investment Advisory Hub: Link between funding and projects* - **P. Szappanos** (Water Division, Projects Directorate, European Investment Bank)

15:10 - 15:30 *Funding Water Utilities investments: opportunities and limitations for banks and financiers* **A. Fino** (ASA - Livorno)

15:30 - 15:50 *Pictet's experience on Megatrend. Pictet Water and the thematic approach* **A. Costantini** (Senior Investment Manager, Pictet Funds S.A.)

15:50 - 16:00 Discussion

16:00 - 17:30 **3rd Session: REGULATION IMPACT ASSESSMENT THROUGH WATER UTILITY PERFORMANCE ANALYSIS**

16:00 - 16:25 *Performance measurement of Water Utilities: efficiency, benchmarking, value creation* - **A. Guerrini** (University of Verona)

16:25 - 16:50 *Water pricing regulation in Europe: the Flanders case study.* - **E. Huyghe** (Chairman of PIDPA)

16:50 - 17:15 *The regulatory experience in Tuscany. Lessons to learn and future pathways* **A. Mazzei** (ANEA/AIT)

17:15 - 17:30 Discussion

17:30 **Welcome Cocktail**

12 SEPTEMBER 2017

09:00 - 13:00 **Plenary Session**

Chairs: F. Fatone (Coordinator of the Horizon2020 “SMART-Plant” Innovation Action, Polytechnic University of Marche, Italy) - **R. Gori** (University of Florence, Italy)

09:00 - 09:25 *The Italian water policies to deliver circular economy in the water sector*
S. Velo (Deputy Minister - Italian Ministry of Environment, Land and Sea Protection)

09:25 - 09:50 *Water Policy in Israel: Past, Present and Future* - **O. Sachs**
(Ambassador, Israeli Embassy in Italy)

09:50 - 10:15 *ICT to deliver circular economy in water-smart cities* - **H. Leckie**
(OECD, Division of Climate, Biodiversity and Water)

10:15 - 10:40 *Circular economy in the water sector: what are we actually delivering to the market?* **A. Rubini** (Scientific and Policy Manager, The European Water Platform WssTP, Belgium)

10:40 - 10:50 Discussion

10:50 - 11:10 *Coffee Break*

11:10 - 11:30 *New approaches and indicators to evaluate circularity: the case of the Horizon2020 SMART-Plant Innovation Action* - **P. Stanchev**, E. Katsou (Brunel University of London, United Kingdom)

11:30 - 11:50 *Circular economy and WWTPs: water reuse and biogas production*
N. Bazzurro (Internationalization and Innovation Department, IREN SpA)

11:50 - 12:10 *Best sludge management practice to turn problems in valuable resources: technical, economic and environmental sustainability* - **S. Ferretti** (General Director, GIDA SpA, Italy)

12:10 - 12:30 *Greenhouse gas emissions and carbon trading opportunities for waste-water treatment* **R. Gori** (University of Florence, Italy)

12:30 - 12:50 *Role of nature-based systems in decentralised approaches for linking sanitation to energy and food security* - **F. Masi** (IRIDRA srl, Italy)

12:50 - 13:00 Discussion

13:00 - 14:00 *Light Lunch*

14:00 - 17:30 **Parallel Sessions**

14:00 - 15:45 **ROOM A**

Session 1 - Finance and infrastructure - Chair: Teodor Popa

Bankable irrigation infrastructures - **F. Bogliolo** (Via Marina, France)

Financing large water resource projects in South Africa - the challenge of the public good element
M. Muller (School of Governance University of the Witwatersrand, South Africa)

Renewal and expansion of the water infrastructure by utilities aggregation. Romania case study.

T. Popa (Compania Apa Brasov, Romania, IWA Tariffs and Finance Working Group)

Irrigation water management challenges in developing countries - **M. Ahmadvand, M. Sharifzadeh,**
A. Ebdam (Yasouj University, Iran)

Factors Contributing to Application of Supplemental Irrigation Technique in Fig Production

M. Sharifzadeh, M. Ahmadvand, A.A. Kamgar Haghighi, A. R. Sepaskhah, T. Honar, M. Abdolahipour
Haghighi, Sh. Kamyab, M. Khosrozadeh (Yasouj University, Iran)

14:00 - 15:45 **ROOM C**

Session 2 - Sustainability and sustainable solutions - Chair: Rui Marques

Circular Economic Models for Water Asset Management - **F. Fantinel,** A. Guerrini, F. Fatone
(Innoexc-hub, Switzerland - University of Verona, Italy Polytechnic University of Marche, Italy)

Adsorbents for detergent removal from grey water - **D.T.K. James,** A. Ifelebuegu (Coventry University, UK)

*Leakage Detection, Condition Assessment And Rehabilitation Planning For Investment Prioritization
In Milan Water System* - **M. Fantozzi, E. Lanfranchi, F. Marelli** (Studio Marco Fantozzi, Italy - MM SpA, Italy)

*Re-design on Castiglione delle Stiviere (Italy) Water system for optimal energy, pressure and leakage
management using integrated mathematical models, leakage specialist software and energy
efficiency incentives* - **M. Pedroni,** M. Zaghini, M. Fantozzi, D. Persi, L. Parodi (AqA Mantova, Italy
Gruppo Tea, Italy - Studio Marco Fantozzi, Italy DHI, Italy - EGO Power, Italy)

*Optimal assets management of a water distribution network for leakages minimization based on
innovative efficiency parameters* - **C. Perrini,** G. Cavazzini, S. Bari (University of Padova, Italy)

Infrastructure asset valuation in water and wastewater services - what is the situation in Portugal?
H. Alegre, R. Amaral, J.S. Matos (National Laboratory for Civil Engineering LNEC, Portugal - Instituto
Superior Tecnico University of Lisbon, Portugal)

15:45 - 16:15 **Coffee Break**

16:15 - 17:30 **ROOM B**

Session 3 - Risk management - Chair: Konstantinos Tsagarakis

Assessment of flood risk of potential contamination sources in the Arno river catchment

M. Masi, R. Iannelli, C. Arrighi (University of Pisa, Italy - University of Florence, Italy)

*An implementation of asset management in an industrial and urban environmental utility, using
risk based investment prioritization and a valuation index* - **J. G. Silva,** J.P. Pitta, A. F. Pinto, R. Amaral,
L. Ghira, C. Castro, B. Lima, N. Bróco (Águas de Santo André, Portugal Instituto Superior de Engenharia do
Porto, Portugal - AdP Serviços S.A., Portugal - Instituto Superior Técnico University of Lisbon, Portugal)

Short-And Long-term Enterprise Risk Management: The Role Of Infrastructure Asset Management
A. Luís, F. Lickorish, S. Pollard - presented by **P. Duarte** (EPAL, Portugal and Cranfield University, UK)

A novel methodology to assess the water risk profile of water utilities - K. Tsagarakis, **T.A. Tsalis,**
I. Nikolau (Democritus University of Thrace, Greece)

*Prioritising Investments at EPAL and LVT: presentation and comparison of two risk-based
approaches* - A. M. Luís, M. J. Capela, P. Duarte, **A.S. Santos,** B. Martins, E. Caldeira, A. Mata, J. Fialho,
F. Serranito - presented by P. Duarte (EPAL, Portugal)

14:00 - 15:45 **ROOM B**

Session 4 - Economic Valuation - Chair: Roman Neunteufel

Can latent variables explain non attendance in water customer's surveys? - **R. Scarpa**, C. Franceschinis, M. Thiene (University of Padova and Verona, Italy)

Results from the evaluation of domestic efficiency programmes in the UK and lessons learnt for the water industry - **D. Manousseli** (University of Southampton, UK)

Willingness to pay for irrigation water abstraction in New Zealand: preliminary results from a discrete choice experiment study - **R. Scarpa**, A. Kravchenko (ICT and Development Section, Thailand - ICT and Disaster Risk Reduction Division, Thailand - United Nations ESCAP Bangkok, Thailand University of Verona, Italy)

Valuing the willingness to pay for improving irrigation water supply reliability: An approach based on probability density functions - **M.D. Guerrero-Baena**, A.J. Villanueva, J.A. Gómez-Limón, K. Glenk (University of Cordoba, Spain Scotland's Rural College, UK)

Equipment's Inspections and Energy Performance - Francisco Serranito, **Pedro Fontes**, José Botelho, Márcio Pedrosa, Rui Fernandes, Nicole Feliciano (EPAL, Portugal)

15:45 - 16:15 **Coffee Break**

16:15 - 17:30 **ROOM A**

Session 5 - Tariffs and regulation - Chair: Marta Suarez

Price regulation in Portugal, present and future - **A. Gonçalves da Cunha** (ERSAR - Entidade Reguladora dos Serviços de Águas e Resíduos, The Water and Waste Services Regulation Authority, Portugal)

Dare to be innovate in water tariffs? - **M. Termes, F.A. Baldaro** (University of Barcelona, Spain CETAQUA, Spain - Water research center of Suez group, Spain)

Internationally glancing at public-private partnerships in the water sector - **R. Parena** (IWA, exSMAT Group, Italy)

Enhancing asset knowledge to improve French public policies for sustainable drinking water asset management - **E. Renaud**, B. Rulleau, A. Husson, C. Wittner (Irstea Bordeaux, France UMR GESTE 1, France)

Ten Years Of Regional Operation In Romania: Lesson Learned And Future Challenges - **A. Boer**, S. Caian (BDO, Romania)

16:15 - 17:30 **ROOM C**

Session 6 - Communication Strategy - Chair: Ed Smeets

Provision of strategic information for long term AM decisions: the performance of the Austrian Water supply services in droughts and summer heat-waves as a reference for climate change scenarios - **R. Neunteufel**, B. Schmidt, R. Perfler (University of Natural Resources and Life Sciences Vienna, Austria - Institute of Sanitary Engineering and Water Pollution Control, Austria)

Improving business-to business communication in water utilities - **R. Sallaku**, V. Vigolo, A. Bonfanti, F. Testa (University of Verona, Italy)

Disclosing databases on water business: behind the scene - **J. Hammenecker** (De Watergroep, Belgium)

Examining the Relations between Arsenic Concentrations in Texas Water and Online Search Traffic Data - A. Mavragani, A. Sampri, **K. Tsagarakis** (Democritus University of Thrace, Greece University of Stirling, UK)

09:00 - 13:00 **Parallel Sessions**

Conference on Infrastructure Asset Management and Utility Bankability

09:00 - 11:00 **ROOM A**

Session 7 - Performance assessment of WWTP and water reuse - Chair: Francesco Fatone

Performance Assessment Of Portuguese Wastewater Treatment Plants Using Data Envelopment Analysis - A. Henriques, J.G. Silva, M. Fontes, P. Amorim, A. Camanho (Universidade do Porto, Portugal Águas do Centro Litoral AdP Group, Portugal - AdP Energias & Instituto Superior de Engenharia do Porto, Portugal)

A macroeconomic model of water capital conservation - D. Roussis, C. Makropoulos, G. Karakatsanis (NTUA, Greece)

Opportunities and needs to find new strategies for sustainability for water and material reuse
B. La Comba (Azienda Servizi Ambientali ASA, Italy)

Deterioration assessment of the wastewater treatment plants and efficiency analysis of the processes - F. Hernández Sancho, L. Castellet Viciano, V. Hernández Chover (Water Economics Group University of Valencia, Spain)

Assessing the performance of the unitary processes of wastewater treatment facilities: an optimal management indicator - F. Hernández Sancho, V. Hernández Chover, L. Castellet Viciano (Water Economics Group University of Valencia, Spain)

11:00 - 11:30 **Coffee Break**

11:30 - 13:00 **ROOM B**

Session 8 - Asset management of stormwater - Chair: Helena Alegre

Asset management of stormwater control measures - Maintenance practices and associated costs in two French cities - C. Werey, W. Arnould, F. Rodriguez (IFSTTAR GERS/LEE, Irstea UMR GESTE Enges, France)

Using economic analysis to enable integrated water management investments - potable reuse of stormwater in Australia - K. Whiteoak (Australia)

Asset management of stormwater control measures: a new story for urban stormwater management - C. Werey, F. Cherqui, N. Le Nouveau, T. Fletcher, S. Barraud (Irstea UMR GESTE Enges, France - INSA LYON, France - Cerema, France - Waterway Ecosystem Research Group Dept. of Resource Mgt. & Geography The University of Melbourne, Australia)

Integrated techno-economic optimization of wastewater collection and treatment system in the town of Livorno - M. Masi, S. Pagliara, M. Palermo, M. Del Corso, C. Calastri, G. Romano, R. Iannelli (Department of Energy, Systems, Territory and Construction Engineering and Department of Economics and Management University of Pisa, Italy - Azienda Servizi Ambientali ASA, Italy)

13:00 - 14:00 **Light Lunch**

14:00 - 17:30 **Parallel Sessions**

09:00 - 13:00 **Parallel Sessions**

4th International Conference on Water Economics, Statistics and Finance

09:00 - 11:00 **ROOM B**

Session 9 - Water demand - Chair: Andrea Guerrini

Mineral Water demand, policy and the double dividend in Italy - **L. Castellucci**, A. D'Amato, F. Diluiso, G. Pallante (University of Rome Tor Vergata, Italy - Italian Ministry of Environment, Land and Sea, Italy TA Sogesid, Italy)

Determinants of residential water demand and sustainability of water tariffs: analysis based on administrative data of a Tuscan municipality - **E. Conti**, L. Cecchi, L. Ravagli (AIT, Italy - Irpet, Italy)

High Quality Water - **N. Ceravolo** (Azienda Servizi Ambientali ASA, Italy)

Assessing the impact of individual metering on households water use: evidence from Andorra
A. Reynaud, M. Pons, C. Pesado (Toulouse School of Economics, France - Sustainability Observatory of Andorra, Andorra)

Estimation of residential water demand. Accounting for substitution patterns and non-linear income effects - **M. Suarez-Varela** (University of Valencia, Spain)

A framework to assess product water labels - **K. Tsagarakis**, C. Tsavdara, I. Nikolaou (Business and Environmental Technology Economics Lab, Environmental Engineering Department, Democritus University of Thrace, Xanthi, Greece)

11:00 - 11:30 **Coffee Break**

11:30 - 13:00 **ROOM A**

Session 10 - Communication Strategy - Chair: Jan Hammenecker

From silo based AM to client based AM - **E. Diericx** (De Watergroep, Belgium)

Sustainability disclosure among Italian water utilities: what and how they report - **S. Cantele** (University of Verona, Italy)

For better and for worse: the crucial relationship between suppliers and users of water services within an Italian industrial district - **S. Vernizzi**, A. Beretta Zanoni (University of Verona, Italy)

11:30 - 13:00 **ROOM C**

Session 11 - WWTP Management: Cost Benefit Analysis - Chair: Francesc Hernandez

Advanced statistical techniques for energy cost modeling in WWTPs - **D. Torregrossa**, F. Hernandez-Sancho, J. Hansen, U. Leopold (Luxembourg Institute of Science and Technology, Luxembourg Water Economic Group, Valencia, Spain - University of Luxembourg, Luxembourg)

Monetary valuation of the environmental benefits derived from removing emerging pollutants in urban WWTPs - R. Fuentes, F. Hernández-Sancho, **A. Bellver-Domingo**, E. Carmona, Y. Picó (University of Valencia and Alicante, Spain)

French Reed Bed as a solution to minimize operational and maintenance costs of wastewater treatment from small settlement: an Italian example - **F. Masi**, A. Rizzo, R. Bresciani, N. Martinuzzi (Iridra Srl, Italy)

13:00 - 14:00 **Light Lunch**

14:00 - 17:30 **Parallel Sessions**

14:00 - 15:45 **ROOM A**

Session 12 - Agricultural water management - Chair: Jaime Gabriel Silva

Benefits and risks associated with sewage reuse in agriculture - **K. Stamatelatos** (Democritus University of Thrace, Greece)

The distributional impact of rainfall variability in rural Ethiopia - **S. Auci, L. Castellucci**, M. Coromaldi (University of Palermo, Italy - University of Rome "Tor Vergata", Italy - University of Rome "Niccolò Cusano", Italy)

Water Resources used in Agricultural Crops: Improving Management in presence of Climate Changes - **S. Auci**, D. Vignani (University of Palermo, Italy - ISTAT, Italy)

Acceptability of the use of treated urban wastewater for irrigation: a case study in Emilia Romagna (Italy) - **M. Michetti**, M. Raggi, E. Guerra, D. Viaggi (University of Bologna, Italy)

15:45 - 16:15 **Coffee Break**

16:15 - 17:30 **ROOM B**

Session 13 - Asset management, cost analysis and planning - Chair: Ed Smeets

Cost benefit analysis for water network resilience assessment - **C. Werey**, B. Rulleau (Irstea UMR GESTE Engees Bordeaux, France)

Asset management and resilience of water networks: cost accounting approach for crisis cost valuation - **C. Werey**, A. Cheritat, F. Sedehizade, J.M. Weber, C. Feliers (Irstea GESTE Engees, France BWB Berliner Wasser Betriebe, Germany - EMS Service de l'eau de l'Eurométropole de Strasbourg, France - VEDIF Veolia Eau d'Ile de France, France)

The technical assessment of water supply infrastructure - **L. Tuhovčák**, T. Sucháček, T. Kučera, M. Menšík (Institute of Municipal Water Management, Czech Republic - Faculty of Civil Engineering Brno University of Technology, Czech Republic)

Return of experience in using Life Cycle Cost analysis besides LCA to evaluate sustainability of urban water management and water treatments technologies - **F.A. Baldaro, M. Termes** (CETAQUA, Spain - Water research center of Suez group, Spain University Barcelona, Spain Scientific Advisor in Water Economics at CETAQUA, Spain)

The right benchmarking for the right incentives: the issue of water losses in Italy - **F. Erbetta**, G. Abrate, C. Bruno, A. Manello (University of Piemonte Orientale, Italy - CNR-IRCrES, Italy)

Infrastructure Value Index as an incentive mechanism for improving long-term investment planning in urban water services - **H. Alegre**, R. Amaral, J.S. Matos (National Laboratory for Civil Engineering LNEC, Portugal - Instituto Superior Tecnico University of Lisbon, Portugal)



14:00 - 15:45 **ROOM B**

Session 14 - Benchmarking and efficiency - Chair: Guillermo Donoso

Estimating efficiency of Italian water utilities by accounting for quality issues - **L. Carosi**, G. D'Inverno, A. Guerrini, G. Romano (University of Pisa, Verona, IMT, Italy)

Is industrial water used efficiently? A case study in Zaragoza - **M.A. García Valiñas**, F. Arbués, I. Villanua, M. Suarez-Varela (Universidad de Oviedo, Spain Universidad de Zaragoza, Spain)

Water investment planning: an optimization model for assessing efficiency and sustainability
R. Riccardi, E. Allevi (University of Brescia, Italy)

Operating Cost Coverage for Water Utilities and Quality Performance indicators - **K. Tsagarakis** (Business and Environmental Technology Economics Lab, Environmental Engineering Department, Democritus University of Thrace, Xanthi, Greece)

Coalition Projects Saving Costs Of Water Pollution Reduction: Two Practical Cases And Economic Laboratory Experiment - **P. Sauer**, A. Dvorak, P. Fiala (University of Economics, Prague, Czech Republic - Institute for Sustainable Business, Czech Republic)

15:45 - 16:15 **Coffee Break**

16:15 - 17:30 **ROOM A**

Session 15 - Regulation, governance and policy - Chair: Maria García Valiñas

Towards a concept of basin vocation for integrated water resources management - **M. Bolados**, R. Fuster (Universidad de Chile, Chile)

Multi-level Governance Of Mediterranean River Systems. Application To The Durance River Basin Management (France) - **T. Rieu** (AgroParisTech, France)

MerWEAP: a simple tool for assessing decision on complex water systems. The case of the Limarí River Basin - **G. Donoso**, S. Vicuña, P. Álvarez, R. Díaz (Universidad de Valparaiso, Chile)

Impact evaluation on water consumption after implementation of affordability program in Bogotá, Colombia - **L. Vargas**, S.A. Mingoti, L. Heller (Federal University of Minas Gerais, Brazil - René Rachou Research Center, Brazil)

14 SEPTEMBER 2017

GUIDED TOUR OF THE “CISTERNONE” OF LIVORNO AND OF THE WATER TREATMENT PLANT OF ASA IN “VAL DI CORNIA”

A touristic excursion will take place on 14 September 2017 with a guided tour to the “Cisternone” of Livorno and to the Water Treatment Plant of Azienda Servizi Ambientali (ASA), the Water utility operating in Livorno province.

Besides a lunch in Val di Cornia will be organized.

Under the Patronage of



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STRUCTURE OF THE SESSION

The Conference will be organized in thematic sessions, combining invited speakers and open platform presentations. Invited speakers are responsible for the preparation of a summary state-of the art report for each topic, partially based on the papers submitted and accepted.

TECHNICAL EXHIBITION

A Technical Exhibition will be offered as a complement of the oral and poster presentation sessions. Asset management service providers are invited to participate. Visit the Conference website for more information.

LANGUAGE

The working language of the conference is English.

CONTACTS

For more information about the Conference, visit: iwa2017.ec.unipi.it or send a message to: iwa-livorno2017@aicgroup.it

