

Sustainable watersheds: Emerging economic instruments and finance for water security

XVI World Water Congress

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Room: Cozumel 5



waterfuture
Sustainable Water Future Programme

Session Organizers



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About the Water Future initiative

VISION

Water Future, through its partnerships with a large number of researchers and stakeholders, will work together to harvest and synthesize authoritative sound and a scientific knowledge base to achieve the Sustainable Development priorities associated with water.

KEY OBJECTIVES

1. Conduct innovative research and knowledge synthesis
2. Find solutions to complex water problems through stakeholder collaboration
3. Future-proof our water system through a comprehensive assessment of our global water system
4. Influence policy-making through capacity building and outreach

**Working Groups- More than 400
leading experts from all around
the world**



Group on Economic instruments and Finance for Water Security

THREE COMPLEMENTARY THEMES

Understanding challenges and opportunities for effective economic instruments and finance in water resource management

1. Water abstraction licenses (WAL)
2. Natural assurance schemes (NAS)
3. Payment for watershed services (PWS)



Overarching Theme

“explore emerging economic and financial instruments for enhancing water security worldwide in a changing climate, with a focus on understanding which instruments are the most suitable for a given watershed or basin”

Session Theme and Objectives

1. Explore the impacts, challenges, and opportunities of a range of different economic instruments and finance to enhance water security.
2. Identify and discuss key emerging principles underlying promising economic instruments and finance across diverse political, cultural, socioeconomic, and environmental contexts as a foundation for developing guidelines for choosing and adapting the most appropriate solutions for local contexts.
3. Develop an international network of scientists, practitioners, decision-makers, and interested actors to share resources and maintain dialogue related to effective economic instruments and finance for promoting watershed security.
4. Identify approaches for engaging diverse actors in transdisciplinary research on the development and application of innovative economic and financial schemes, and translating

Projected outcomes

Synthesize the results from the session into **a set of lessons learned and guidelines for economic instruments to enhance water security**, along with **recommendations** for adapting these strategies to a range of different environmental and socioeconomic contexts worldwide

Further develop and strengthen **an international network of diverse stakeholders** within the Water Futures initiative to share knowledge and experience and forge new transdisciplinary research Further develop and strengthen an **international network of diverse stakeholders** within the Water Futures initiative (e.g **other WaterFuture sister groups**)

to share knowledge and experience and forge new transdisciplinary research

Discussion Questions

- a) how can water security be achieved through targeted economic instruments and sustainable finance adapted to local contexts?
- b) What institutional or other barriers hinder the successful implementation of economic instruments and finance and how can those barriers be overcome?; and
- c) What approaches are available for monitoring the effectiveness of these economic instruments and effective finance to better understand key indicators and drivers of program impacts?

Session Structure & Speakers

Presentations

1. **A global assessment of institutional-economic factors explaining the environmental performance of payments for watershed services**

By Dr. Roy Brouwer, Professor of Economics and Executive Director of the Water Institute at the University of Waterloo, Canada

2. **Economic instruments for water allocation in England and Wales**

By Dr. Dolores Rey, Lecturer in Water Policy and Economics at Cranfield University, UK

3. **The challenge of optimizing payment for watershed services programs: Modeling socio- hydrologic systems in Veracruz, Mexico**

By Dr. Alex Mayer, Professor of Environmental Engineering and founding Director of the Center for Water & Society at Michigan Technological University, USA

4. **A Financing Framework for Water Security**

By Dr. Monica Altamirano, Specialist in Public-Private Partnerships at DELTARES, Netherlands

Panel discussion and questions from the audience

A global assessment of institutional-economic factors explaining the environmental performance of payments for watershed services

By Prof Roy Brouwer (University of Waterloo, Canada)

Short Bios: Roy Brouwer is Professor of Economics and Executive Director of the Water Institute at the University of Waterloo since January 2016. Previously, he was Professor and head of the department Environmental Economics at the Vrije Universiteit in Amsterdam. He a visiting professor at the Swiss Federal Institute for Aquatic Science and Technology (Eawag) in Zürich and Editor-in-Chief of the journal Water Resources and Economics. His primary research interest is in water resource economics, including the economic valuation and modelling of water resources, and the design and evaluation of policy instruments to support sustainable water management.

Economic instruments for water allocation in England and Wales

By Dr Dolores Rey (Cranfield University, UK)

Short Bios: Dr Lola Rey is Lecturer in Water Policy and Economics at Cranfield University (UK). She has more than 7 years of research experience on water resource economics and water availability risks in the agricultural sector. Her current research under the UK Drought and Water Scarcity Programme seeks to understand farmer decision-making processes regarding water management during drought events and the financial impacts of droughts on UK agriculture. Before Cranfield, she was involved in pan European research dealing with water markets to cope with water shortages; drought and flood policies related to the agricultural sector in different countries; and climate change impacts on agriculture.

The challenge of optimizing payment for watershed services programs: Modeling socio-hydrologic systems in Veracruz, Mexico

By Prof. Alex Mayer (Michigan Technological University, USA)

Short Bios: Prof Alex Mayer is Charles and Patricia Nelson Presidential Professor of Environmental Engineering and founding Director of the Center for Water & Society at Michigan Technological University, where he has been since 1991. Dr. Mayer's teaching and research focuses on water resources sustainability in water-scarce regions, hydrologic processes and modeling of land use and climate change, and groundwater availability and quality. His research takes place in the Laurentian Great Lakes, the Rio Grande-Rio Bravo basin, and northwest and central Mexico. Dr. Mayer has directed more than \$11 million in externally-funded research and has published 100 papers and book chapters in peer-reviewed literature.

A Financing Framework for Water Security

By Dr Monica Altamirano (DELTAIRES, Holland)

Short bios: Dr. Monica Altamirano is a Specialist in Public-Private Partnerships in Deltares. Policy analyst and Systems Engineer: Specialist in Public-Private Partnerships in Deltares. Policy analyst and Systems Engineer with a strong background in Economics. Before joining Deltares she worked as researcher and lecturer in the Faculty Technology, Policy and Management of Delft University of Technology. In 2010 she defended her PhD Thesis titled: Innovative contracting practices in the road sector: Cross-national lessons in dealing with opportunistic behaviour.

She has promoted the translation of lessons learned on PPP's and private financing in the road sector to the water management sector. Her research and consultancy focuses on making green Adaptation to Climate Change a financially viable concept for developing countries. She serves regularly as Financial Expert to the Dutch Disaster Risk Reduction Team, and holds the academic lead of the work group on Disaster Resilience within the Future of Construction Project of the World Economic Forum. She is member of the UNECE team of specialists in PPP and has drafted the financing chapter of the UNECE PPP guidelines for water and sanitation.

Moderated Discussion

Next Steps

1. Special Issue from the session
2. Contributions to Handbook on Water Resources (ongoing)
3. Implementation and integration of thematic approaches at basin scale in countries across the globe
4. Collaborate and make links with our sister WaterFutures groups (e.g. Nexus, Water futures, Groundwater, etc).
5. Support FutureEarth and WaterFutures in this collective project

Thank You!

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