

19th International
RIVER
SYMPOSIUM

EXCELLENCE – COLLABORATION – INTEGRATION

P R O G R A M

New Delhi, India
12–14 September 2016

*GREAT RIVERS OF THE WORLD:
MANAGEMENT FOR SHARED BENEFITS*



MANAGED BY

 INTERNATIONAL
RiverFoundation

WELCOME

Welcome to the 19th International Riversymposium and let us all celebrate this inaugural running of the event outside of Australia. Whether this is your first event (it is for me personally) or your 19th, I hope you find it engaging, challenging, and ultimately useful in achieving a future where we manage our river basins in a more sustainable manner.

Here at the International RiverFoundation we seek to encourage the restoration, protection and sustainable management of the world's rivers. Water is crucial for all life—and we need healthy rivers, lakes and wetlands for sustainable development. Our role is to promote and support effective management of these resources by facilitating knowledge sharing, education and best practice river basin management, and by recognising and rewarding those making a difference through our awards.

The International Riversymposium was first held in Brisbane in 1998 and provides a platform for river managers, policy developers, scientists, consultants, NGOs and community organisations to share knowledge and innovative ideas on all aspects of river and water management. By facilitating discussion and collaboration between key stakeholders, the event celebrates the environmental, economic and social value of rivers across the globe.



The symposium provides an international forum for examining best practice in river and watershed management.

I must express our deep gratitude to our event sponsors and supporters. As a small NGO we simply could not run such a significant event without your generous support. In particular

we must acknowledge the efforts of the World Bank, and the Australian Department of Foreign Affairs and Trade (DFAT) for their assistance in making this first International Riversymposium outside of Australia possible.

Finally, a reminder that the 20th International Riversymposium will again be held in the wonderful river city of Brisbane, Australia. I join with our long time sponsors and supporters, including Brisbane City Council, in inviting you to join us in 2017.

All the best from the IRF staff and International Riversymposium Organising Committee.

Ian Atkinson

CEO, International RiverFoundation

Brisbane River



19th International RIVER SYMPOSIUM

EXCELLENCE – COLLABORATION – INTEGRATION

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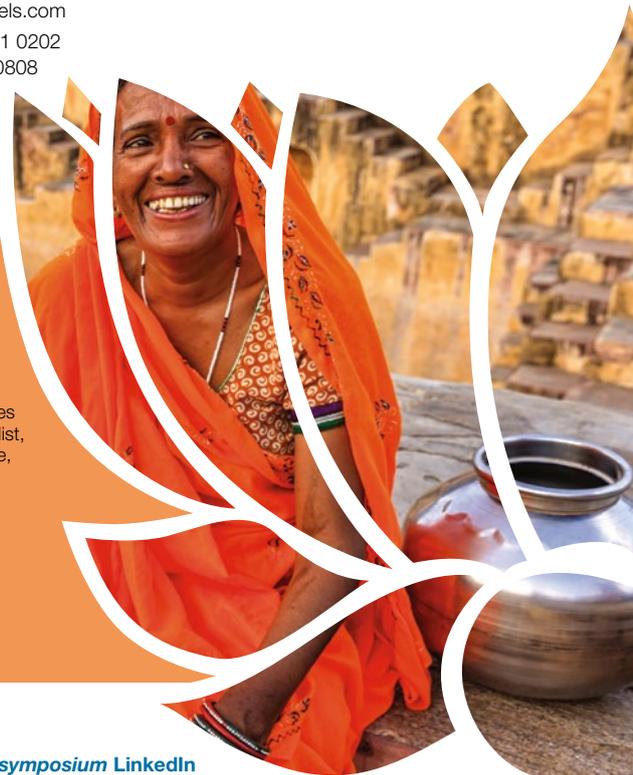
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Monday 12 September

Abstracts and profiles are available at www.riversymposium.com/program

SESSION 1 (Durbar)				
8:30	Welcome from IRF Chair Roger Higgins			
8:40	Australian government perspective Harinder Sidhu			
8:50	Indian government perspective			
9:00	Climate change, water and sustainable development Leena Srivastava			
9:30	Changes in the Hindu Kush Himalayan Cryosphere and What it means for the mountains and downstream David Molden			
10:00	Morning break			
	SESSION 1 (Durbar)	SESSION 2 (Roshnara)	SESSION 3 (Jehangir)	SESSION 4 (Mumtaz Mahal)
10:30	SPECIAL SESSION: International Centre for Integrated Mountain Development – Hindu-Kush Himalayas: the role of mountains in water security	Integrated river basin management Development of river basin models for investigation of improved water management options: case study of the Upper Godavari basin in India A Garudkar	Community engagement, gender and leadership The new large dam expansion in Africa and its potential impacts on downstream floodplains and deltas S Duvail	Hydropower Gaining public rejection: lessons for sustainable hydropower development from Myanmar's Myitsone Dam S Cuddy
10:45		Water use and agricultural production trends in the Indus basin: implications for future food security G Podger		Water-energy-food nexus lessons from small hydropower in Bhilangana Sub-basin, Tehri Garhwal, Uttarakhand, India N Khandekar
11:00		Water insecurity and IWRM in West Timor, Indonesia M Wolfsbauer	Monitoring the world's rivers through citizen science; results and case studies from major Asian Pacific cities J Ho	Hydropower, environment and environmental flows A Kumar
11:15		Integrated river basin management plan for Ganga A Gosain	Women's involvement in Indonesia's river restoration movement S Hasanati	Issues and challenges of sustainable hydropower development in the Indian Himalayan region S Agarwal
11:30			Academic documentation to restore river: a success story on Boral River, Bangladesh N Khan	Spatial distribution of fish diversity in River Narmada and its tributaries P Gurjar
11:45		Q&A	Q&A	Q&A
12:00	Lunch break 12:30 <i>Poster Presentations (Alamgir)</i>			
1:30	SPECIAL SESSION: World Wide Fund for Nature (WWF) – River basin planning and strategic water management in Asia: prospects for the 21st century	Managing large river basins Issues and challenges of transboundary water management with special reference to Kosi River S Bagade	River restoration The development and uptake of the River Styles Framework: a catchment approach to guide coherent, geomorphologically informed river management practices G Brierley	Hydropower Flow alteration signatures of diversion hydropower: an analysis of 32 rivers in southwestern China K Kibler
1:45		Supporting basin planning in India: building on experiences in Australia C Pollino		Impact of hydropower projects and of the 1960s' Indus Water Treaty on the fish fauna found in the Indus and Jhelum River basins common to India and Pakistan M Rafique
2:00		Variability of river discharges: a major challenge for water allocations and water management in India S Kanike	Multi-stakeholder approach to tributary river restoration R Ramamoorthy	Effectively governing the hydropower sector: a call for a basin-wide perspective K Lazarus
2:15		Towards enabling outcomes from basin planning processes – lessons & observations P Wallbrink	Dam removal and restoration – Elwha River, Olympic National Park, USA J Warrick	
2:30			Application of ecohydraulic approach in bank protection model D Rini	Q&A
2:45		Q&A	Building sustainable partnerships in river basin management B Fokkens	
3:00	Afternoon break			
3:30	Environmental flows The international transfer of environmental flow methods C Gippel	Managing large river basins Aboriginal waterway assessments: new tools for realising shared benefits in the Murray-Darling Basin W Mooney	Community engagement, gender and leadership Water museum; for river and water democracy I Ahmed	SPECIAL SESSION: International Finance Corporation (IFC) and Australian Department of Foreign Affairs (DFAT) – Advancing hydropower governance in Asia
3:45		Socio-cultural and livelihoods flow assessment for Ramganga river, India N Khandekar	Community engagement and women's leadership: reflections from India-Nepal Trans-boundary Resilience Project M Bilgi	
4:00	Ecohydrological status of natural springs in Akole and Sangamner blocks of Ahmednagar district and their significance to environmental flows R Thomas	Taming the lower Brahmaputra River – Bangladesh initiative H Rahman	Shared benefits: the importance of practical knowledge G Geldof	
4:15	Environmental flows: all dressed up with somewhere to go J King	Opportunities for cross-border collaboration in monitoring and management of river biodiversity in Indus Basin – moving from conflict to shared responsibility V Zakaria		
4:30	Is there an international legal duty to restore wetlands and waterways by environmental water allocations? J Jensen	Stepping out of the 'water-box': re-thinking transboundary water cooperation Y Yasuda	Gender and river basin management S Kaityaini	
4:45	Q&A	Q&A	Q&A	
5:00	Close			

7:00 SPECIAL BREAKFAST: University of Queensland Global Change Institute – Water for equality and wellbeing in Asia						
	SESSION 1 (Durbar)	SESSION 2 (Roshnara)	SESSION 3 (Jehangir)	SESSION 4 (Mumtaz Mahal)	SESSION 5 (Sheesh Mahal)	
8:30	SPECIAL KEYNOTE SESSION: International perspectives Cleaning India's rivers: bringing the global experience to bear G Connors	SPECIAL SESSION: International Finance Corporation (IFC) – The role of environmental flows in broad-based basin planning for hydropower in Asia	SPECIAL FORUM: Alliance for Water Stewardship – Asia-Pacific water stewardship	SPECIAL SESSION: World Bank – Indus, Ganges and Brahmaputra: the future of Himalayan rivers	Technology & innovation	
8:45					Water sensitive growth, not water intensive growth in the north-western Indian states R Singh	
9:00	Aquatic ecosystems restoration: lessons learned from Asian Development Bank Q Zhang				Nanotechnology for water treatment J Schubert	
9:15					Monitoring river ecosystems through citizen science and digital tools P Mehta	
9:30	Collective action on the Yangtze: Is China's 'silent spring' enabling water security? G Koch				Modelling a part of Baitarani sub-basin using river system approach through source software R Sankhua	
9:45		Q&A				
10:00	Morning break					
10:30	 Emerging River Professional Award finalists	Policy, governance & institutions	SPECIAL FORUM: Alliance for Water Stewardship – Asia-Pacific water stewardship	SPECIAL SESSION: World Bank – Indus, Ganges and Brahmaputra: the future of Himalayan rivers	Technology & innovation	
10:30		How can learning be enhanced in water policy, governance and institutions? J Schoeman			A framework for ecological transformation of Musi River through geodesign S Bokka	
10:45		Impacts and outcomes of water policy reform for irrigation intensive regions: a grass-roots look at the implementation of the Murray-Darling Basin Plan P Davey			Hydromorphological walkover survey of 5500km of Scottish rivers: lessons and opportunities S German	
11:00		River management in the context of CBNRM: an Australian story K Broderick			Riverbed farming technology adoption by land poor farmers of Tarai districts of Nepal H Gurung	
11:15		The Oregon model: a grassroots approach to watershed health T Davis			Assessing a varying demand scenario using WEAP for Damanganga Project, India S Yadav	
11:30		Orinoco report card: a tool for improving and maintaining basin health C Suarez			Managing nutrients from sewage treatment plant discharges in to receiving waters by utilising nutrient offsets framework P Susarla	
11:45		Q&A				
12:00	Lunch break 12:30 Poster Presentations (Alamgir)					
1:30	 Thiess International Riverprize finalists	SPECIAL SESSION: Myanmar National Water Resources Committee Secretariat, Australian Water Partnership, The World Bank, and Hydro-Informatics Centre (HIC) in Myanmar – Integrated Ayeyarwady river basin management in a transforming Myanmar	SPECIAL FORUM: Alliance for Water Stewardship – Asia-Pacific water stewardship	SPECIAL SESSION: World Wide Fund for Nature (WWF) – Keeping rivers alive: from knowledge to practice	Water quality & public health	
1:45						Management of sewage effluent discharges to keep our rivers healthy: comparative investigations in India and South Australia A Kumar
2:00						Speciation of lead and cadmium in the water of various rivers in Masara, Maco, Compostela Valley C Martinez
2:15						Contribution of drinking water to dietary intakes of selected trace mineral nutrients in Bangladesh N Mirza
2:30						Promoting multi-stakeholder partnership in improving water pollution control and preserve biodiversity of Brantas Watershed Indonesia P Arisandri
2:45						Understanding the barriers that prohibit the integrations of TWCM principles in the water strategies of urban utilities P Bhattacharya
2:45		Q&A				
3:00	Afternoon break					
3:30	Special keynote session: encore and international	Urban rivers	SPECIAL FORUM: Alliance for Water Stewardship – Asia-Pacific water stewardship	SPECIAL SESSION: World Wide Fund for Nature (WWF) – Keeping rivers alive: from knowledge to practice	Integrated river basin management	
3:30	Towards enabling outcomes from basin planning processes – lessons & observations P Wallbrink	Urban river restoration: cities & water A Brandeis			Developing river basin report cards: a practitioner's guide W Dennison	
3:45		Urban wetlands for liveability – case studies from India and Australia H Vardhan				
4:00	Effectively governing the hydropower sector: a call for a basin-wide perspective K Lazarus	Conservation of rivers for environmentally friendly urbanisation in context of Bangladesh M Alauddin			Risk assessment for developing sustainable catchment management practices in Badulu Oya Upper Watershed, Sri Lanka C Sanjeewa	
4:15		Building a flood resilient Brisbane N Baker			The Rhine and its water quality T Stötter	
4:30	Rivers and borders: exploring cooperative narratives in conflict zones (video presentation) S Ali	River ecotourism H Goharipour			Long term management of a rapidly aggrading alluvial river in New Zealand M Gardner	
4:45	International RiverFoundation: our future R Higgins	Q&A			Q&A	
5:00	Close					

Wednesday 14 September

Abstracts and profiles are available at www.riversymposium.com/program

	SESSION 1 (Durbar)	SESSION 2 (Roshnara)	SESSION 3 (Jehangir)	SESSION 4 (Mumtaz Mahal)
8:30	Integrated river basin management The story of the Thames – from liquid history to solid future A Driver	Policy, governance & institutions Enhancing cooperation through water diplomacy and multilevel stakeholder engagement: learnings from IUCN experiences in Asia A Chatterjee	SPECIAL SESSION: The Asia Foundation – Civil society and transboundary water management experiences from south and south east Asia	SPECIAL SESSION: CSIRO – Basin planning in the Brahmani Baitarani Basin, India
8:45		Legal analysis of issues, challenges and opportunities in Indo-Pak Trans-Boundary Groundwater Cooperation A Alam		
9:00	Supporting integrated water resources management in the Koshi Basin, and beyond D Penton	Shared basins – contested benefits: need for an alternative diplomacy paradigm for improving formal trans-boundary water instruments between India and Nepal S Siddiqui		
9:15	Future cards – tools for integrated river basin management H Kelsey	Improving policy, governance & institutions for shared water management J Dore		
9:30	Restoring river system processes at the catchment scale for economic and social resilience D Hetherington			
9:45	Q&A	Q&A		
10:00	Morning break			
10:30	Environmental flows Towards e-flow policies for seasonal river systems through valuation of ecosystem services and biodiversity S Bandyopadhyay	Climate change and sustainable development Water resources management for adaptation to the effect of climate changes in the basins of rivers, lakes and aquifers: implementation of the “Paris Pact” signed at the COP21 J Donzier	SPECIAL WORKSHOP: Australian Water Partnership – Managing drought and water scarcity: Do key principles transcend basins, regions and nations?	SPECIAL SESSION: International Water Management Institute (IWMI) – Informing Change in the Indus Basin: knowledge sharing and cross-basin learning to support stronger transboundary management
10:45	Payments for watershed services: lessons from China and beyond A Lopez			
11:00	ELOHA – Ecological limits of hydrologic alteration: What have we learned? A Arthington	Observed trends and changes in daily precipitation events over Uttarakhand State in India 1901-2013 A Sarkar		
11:15	Environmental flow considering water quality and changing climate: an emerging issue in river water management S Chaudhary	Traditional water sources in Nepal – status and climate resilience S Tilleard		
11:30	Comparing incomparables in DRIFT EFlows assessments A Joubert	Ensuring resilience energy-water-food management ahead of the next climate shock N Hall		
11:45	Q&A	Q&A		
12:00	Lunch break 12:30 <i>Poster Presentations (Alamgir)</i>			
1:30	Climate change and sustainable development	SPECIAL SESSION: International Finance Cooperation (IFC) – Developing effective fish passages for South-East Asian and Himalayan hydropower projects	SPECIAL WORKSHOP: Australian Water Partnership – Managing drought and water scarcity: Do key principles transcend basins, regions and nations?	SPECIAL GAME: University of Maryland Centre for Environment Science – The river basin report card game: understanding stakeholder decision-making
1:45	Role of ICID and other organisations in helping us achieve the SDGs A Tyagi			
2:00	Can water sustainability be achieved through UN Sustainable Development Goal 6? Implications, challenges and possibilities N Hall			
2:15	Launch of the Australian Water Knowledge Digital Platform – an initiative to share Australian water expertise with the Asia Pacific region K Delfau			
2:30	Linking natural capital to economic indicators for freshwater systems S Fanaian			
2:45	Q&A			
3:00	Afternoon break			
3:30	Closing plenary Introduction Shawn Day			
3:35	Presentation from the 2016 winner Thiess International Riverprize winner			
3:50	River Rejuvenation in India Rajendra Singh			
4:20	Emerging water professionals statement			
4:25	Closing remarks			
4:30	Close			

Brisbane City Council is proud to be a founding sponsor of the International *Riversymposium*.

Brisbane is home to more than two million people and renowned for its riverside location, subtropical climate and friendly relaxed lifestyle. As Australia's New World City, Brisbane is located in one of the fastest growing regions in Australia.

The Brisbane River, a long standing icon of Brisbane, is central to the city's image and Council is committed to its protection, enhancement and sustainable management.

Brisbane will host the 20th International *Riversymposium*. We look forward to welcoming you in 2017 to our river city.

For more information visit us at the RiverExpo or go to brisbane.qld.gov.au/riversymposium



KEYNOTE SPEAKERS



Gary Brierley

Mon 12 Sep, 1:30pm

Professor Gary Brierley is a geomorphologist who specialises in the use of landscape science to guide coherent and proactive management applications, particularly in river rehabilitation and conservation. He was born in the UK, completed his postgraduate work in Canada, established the foundations of his academic career in Australia, and moved to New Zealand in 2005. He is now Chair of Physical Geography at the University of Auckland, New Zealand. With A/Prof Kirstie Fryirs, he co-developed the River Styles framework (www.riverstyles.com) and authored *Geomorphology and River Management*. There has now been extensive uptake of the River Styles Framework in different parts of the world. His primary interest lies in the development and application of approaches to promote an era of river repair in a manner that respects the inherent diversity and variability of river systems. His research group has worked on numerous topics related to human impact on river systems, sediment budgets, river management, environmental governance and education. He has written and edited several books and has published more than 140 internationally refereed journal articles. A recent co-edited book examines landscapes and ecosystems of the Upper Yellow River in Qinghai Province, western China. A core element of his recent work emphasises concerns for the co-production of shared knowledge platforms as a basis for informed management applications, with particular interest in the development of approaches to analysis of 'biophysical-and-cultural' landscapes.

Keynote presentation: The development and uptake of the River Styles Framework: a catchment approach to guide coherent, geomorphologically informed river management practices

Informed river management builds upon coherent scientific understanding of the character, behaviour and evolutionary trajectory of any given catchment. Analyses of the landscape itself provide an integrative platform for such endeavours. The River Styles Framework provides a scaffolded set of procedures to document the geomorphology of a catchment. It has four open-ended stages.

First, reach-scale patterns of river character and behaviour, and their process linkages, are assessed at the catchment scale. Second, geomorphic river condition is appraised in relation to evolutionary traits. Third, reach-scale adjustments are interpreted at the catchment scale to outline likely evolutionary trajectory and the potential for river recovery. These understandings are then used to guide management applications through generation of a realistic (physically achievable) vision for a catchment, derivation of target conditions for all reaches, prioritisation of management activities and implementation of a monitoring programme. Although developed with river managers in Australia, where procedures have now been integrated into policy, the procedures are generic and have been adapted as a basis for geomorphologically-informed management of river systems on all continents. This presentation will provide an overview of the development and uptake of the River Styles framework in different global environmental and management contexts, including discussion of concerns for professionalism in practice in the use of such scientific tools. Lessons learnt in the delivery of professional short courses in various parts of the world will be discussed, outlining challenges faced to ensure effective learning in the application of transformative and proactive approaches to river management.

Genevieve Connors

Tues 13 Sep, 8:30am



Dr Genevieve Connors is the Program Leader for Water and Sustainability in the India Country Office of the World Bank. She is based in New Delhi, where she currently works in the office of the Country Director

on new operations and on analytical work in the Bank's sustainability sectors, including water, environment, agriculture and irrigation, rural development, disaster management and climate change. Previously, for two years, she supervised implementation of the National Ganga River Basin Project, the \$1 billion loan to the Government of India to support cleaning of the Ganga River, primarily in cities in the five states of the mainstem. She was also, from 2013 to 2014, Acting Program Leader for

the South Asia Water Initiative (SAWI) which aims to increase regional cooperation in the management of Himalayan river systems. Her interests are in inter-jurisdictional and transboundary water challenges—including river basin management and surface and ground water pollution management. She has worked in the basins of the Ganga, the Nile, and the Danube. She has a BA from Columbia University, an M.Phil from Cambridge University, and a PhD in Urban and Regional Planning from MIT, where she wrote about the role of street-level bureaucrats and frontline engineers at the Bangalore water utility.

Keynote presentation: Cleaning India's rivers: bringing the global experience to bear

Although a universal definition remains elusive, water security is frequently defined as the availability of an acceptable quantity and quality of water for basic needs and economic production, coupled with an acceptable level of water-related risks for people and their economies. Yet, water stresses throughout much of the developing world are compounded by declining water quality – often to the point of irreversible damage.

Historically, governments across the world rarely see water quality treatment as a priority, partly because: the benefits are largely invisible to beneficiaries; the investments are capital intensive with high operating and maintenance costs; the problems of diffuse pollution are so intractable; and the values a society ascribes to clean-up are often low to begin with. Without easy solutions to incentivize industries and agriculture to do otherwise, without cheaper alternatives to treat urban point source pollution, and without adequate information to understand the specificity and severity of the problem, the water quality problem remains a thorny issue for countries in the fast lane to reducing extreme poverty and boosting shared prosperity.

What can India learn from the global experience? This session examines the global experience with river clean-up, drawing on notable examples in Europe (e.g. the Rhine) and in the US (e.g. the Chesapeake Bay) as well as in emerging economies, such as in Argentina (e.g. the Matanza-Riachuelo) and China (e.g. the Pearl River Delta). What were the successes and failures from these journeys that India can learn from? Ultimately, the final state of surface water bodies – such as a river, a lake, a bay, a stream, or a watershed – is de facto a report card on society and the world has a lot of lessons to offer India.



Stéphanie Duvail

Mon 12 Sep, 10.30am

Dr Stéphanie Duvail is a geographer with the French Institute of Research for Development (IRD). Her research deals primarily with wetland management,

with a special interest in the impacts of large dams on the ecosystems and livelihoods of coastal wetlands and their potential restoration through managed flood releases. She has extensive experience with multi-disciplinary and participatory research. Her PhD focused on a wetland restoration project in Mauritania (Dawling National Park). In 2002-2003 she participated in an EU project that aimed at modelling lagoons in Tunisia, Morocco and Egypt. From 2003 to 2008 she led an IRD research programme on East African deltas. From 2008 to 2011, she is coordinated a Land and Water project funded by the French Ministry of Environment in the Tana and Rufiji deltas on the link between floods and livelihoods, which expanded into a second phase (2011–2014) on the impacts of large scale agro-fuel projects. Since May 2016, she has been based at the National Museum of Natural History in Paris and is involved in the development of a research network on the deltas of the Western Indian Ocean.

Keynote presentation: The new large dam expansion in Africa and its potential impacts on downstream floodplains and deltas

Africa has known 3 phases of large infrastructure development. First, the colonial era. Then, in 1970s and 1980s development aid agencies and banks funded irrigation schemes and dams, often inspired by FAO approaches and the Tennessee Valley Authority model. In most cases, they ignored the specificities of the tropical ecosystems and socio-political contexts and resulted in negative socio-economical and environmental impacts, especially for the downstream floodplains and deltas.

After a pause in dam building in the 1990s and 2000s, a third large infrastructure expansion phase is currently underway in Africa but with even less stringent environmental and social safeguards. They are being sourced from new lenders (BRIC countries, Arab states, public-private partnerships), pushing traditional lending agencies to also lower their standards not to be outcompeted. The designs used are often those of the dams not built after the 1980s. They tend to be designed for hydropower production for rapidly growing urban centres, without managed flood releases for downstream ecosystems. It is essential to improve design and revise operations including involving downstream stakeholders. This presentation will be illustrated with examples from 3 river basins in Africa (Senegal, Rufiji, Tana).



Jean-Francois Donzier

Wed 14 Sep, 10:30am

Jean-François Donzier has been the General Manager of the International Office for Water since 1991. He is General Secretary of the

International Network of Basin Organizations (INBO) and of the International Network of Water Training Centers (INWTC). He was Governor of the World Water Council at its creation in 1997 and GWP Steering Committee Member for 6 years. As a General in the French National Corps of Engineers in Bridges, Water and Forestry, he was entrusted with a very high level of central positions in the French governmental administration at the Ministry of Agriculture and Prime Minister services. He had managed the French National Fund for Rural Water Supply (FNDAE) and supervised Regional Development Companies in charge of irrigated areas in the South of France (1979–1991). He also managed for 4 years the Franco-Swiss multiyear projects for the protection of Lemman Lake and also Annecy Lake against pollution (1975–1979). As head of the Regional Supervision Office in the Moroccan Ministry of Agriculture and Agrarian Reform, he controlled agricultural and rural water supply projects in the Southern region of the country (1973–1975). He is a Knight of the Legion of Honor, Officer of the National Order of Merit and Commander of the French Order of Agricultural Merit.

Keynote presentation: Water resources management for adaptation to the effect of climate changes in the basins of rivers, lakes and aquifers: implementation of the “Paris Pact” signed at the COP21

As part of the Lima-Paris Action Plan, Peru and France organized the 2nd December 2015, the official day on Water and Climate Change Adaptation at the COP21 in Paris, the ‘Paris Pact on water and adaptation to climate change in the basins of rivers, lakes and aquifers’ was presented at the day opening. Carried out by the International Network of Basin Organizations (INBO), the Paris Pact aims at a global mobilisation of the basin organizations and all other stakeholders involved, for starting the actions needed to adapt freshwater management to the effects of climate change. Thus to date, over 348 organizations have already signed the “Paris Pact” in 87 countries. The Pact reminds us that climate change is affecting the quantity and quality of freshwater and aquatic ecosystems, especially through the intensity and greater frequency of extreme hydrological events, such as floods and droughts: the basins are natural areas where

water flows on the surface and in the subsoil: appropriate water resources management and adaptation should be organised at that level. This Paris Pact includes two components: part one is describing the context and providing general principles, and part two is listing the commitments to be made by the signatories to take appropriate measures. The round table organized during this “Water and Adaptation” Day allowed presenting real examples of adaptation projects in different basins around the world. A report on the implementation of the Pact will be presented at the COP 22, next November in Marrakech in Morocco.



Govert Geldof

Mon 12 Sep, 4:00pm

Dr Govert Geldof is a senior consultant, leading his own company in Tzum in the north of the Netherlands, and a visiting associate professor at DTU

in Denmark and at the University of Twente. His main interest is complexity. As a civil and water engineer, he realised at the beginning of the ‘90s that technical knowledge is not enough for bringing ideas from theory into the ‘real’ world. To build the bridge between the technical and social sciences, he uses insights from complexity science. He successfully defended his thesis on ‘coping with complexity’ in 2002. He is an active member of the ENW River network in the Netherlands, the expert network of water safety.

Keynote presentation: Shared benefits: the importance of practical knowledge

When we talk about ‘shared benefits’ we talk about river technology, values, multi-functionality and interactions. We cannot calculate all benefits and values. Partly they are tacit, which means that they only come to play in practice, where people and nature work together to shape the river and its environment. A river is never in equilibrium. Important question: how can we do that? In the keynote a working method will be presented to bring separate worlds together, based on recent experiences in the Netherlands. We call it a Workstead. On the one hand we have the river professionals, both scientists and practitioners, on the other nature organisations, planners, citizens, politicians, companies, etc. In a Workstead they work together on a small, local, concrete and holographic issue, in a narrative way. De emergent results show that you can handle complex river problems without making processes complicated.

KEYNOTE SPEAKERS



Chris Gippel

Mon 12 Sep, 3:30pm

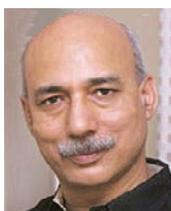
Dr Chris Gippel is Adjunct Senior Research Fellow at the Australian Rivers Institute, Griffith University, and a private consultant. He earned his PhD in 1989 from

the Department of Geography and Oceanography, University College, University of New South Wales, and in the past three years, has been awarded fellowships from the Chinese Central People's Government four times, facilitating sabbaticals to Changjiang Water Resources Protection Institute and Wuhan University.

Chris is known for his contribution to the theory and practice of large wood management, use of turbidity as a surrogate for suspended sediment, and environmental flow assessment. His current interests include assessment of environmental flow requirements, assessment of river and lake health, geomorphological impact assessment, hydrological prediction, and hydraulic modelling for ecological and geomorphological objectives. Chris has contributed to more than 30 environmental flow assessments, including the Yellow River, China, the Indus River, Pakistan and the Rio Ocoña, Peru. He helped develop the Victorian methodology for assessment of the flow needs of estuaries, and recently prepared guidelines for undertaking environmental flow assessment for hydropower development in Laos, and contributed to development of an environmental flow methodology for use in Peru.

Keynote presentation: The international transfer of environmental flow methods

Environmental flow methodologies were first developed in North America in the 1970s, in response to growing exploitation of water resources and apparent declines in ecosystem health. In recent times, diversion of water from rivers has generally slowed or declined in economically developed countries, partly because of community desire to reverse poor river health. In contrast, water resources development is rapidly expanding in some economically developing countries. In situations where water resources are fully or over-utilised, environmental flow assessment is about justifying return of water to the ecosystem, while assessments done for new developments are about determining an appropriate share of the flow to set aside for maintenance of ecosystems and, indirectly, the communities that depend on healthy ecosystems for their livelihoods. It is common practice in developing countries to borrow environmental flow methodologies created in developed countries under quite different circumstances. The social and cultural context of this technology transfer is relevant to which methods are recommended and chosen, and how they are interpreted. This process will ultimately condition the future health of aquatic ecosystems and the livelihoods that depend on healthy ecosystems. This question is explored through reflection on personal experiences from Australia, China, Lao PDR, Pakistan and Peru.



Ashvani Gosain

Mon 12 Sep, 11:15am

Ashvani Kumar Gosain, Professor in the Civil Engineering Department at IIT Delhi, has made a significant contribution to the NATCOM – the

National Communication to the United Nations Framework Convention on Climate Change (UNFCCC). His recent assignments include the formulation of the Ganga River Basin Management Plan (GRBMP), of which he was the Team Leader of the Water Resources Management group. He has also been engaged by the Delhi Government to formulate the Drainage Master Plan in Delhi, and is part of the expert committees appointed by the National Green Tribunal to suggest solutions to deal with the ever-increasing pollution levels in the Yamuna River. Prof Gosain has served as Head of the Civil Engineering Department and the Computer Services Centre of IIT Delhi. Presently, he is also coordinator of the Centre of Excellence for eWater, formulated recently under the MoU with eWater, Australia.

Keynote presentation: Integrated river basin management plan for Ganga

National Water Policy emphasises the need to formulate river basin management plans. First such initiative was taken up for formulation of Ganga River Basin Management Plan (GRBMP) through the consortium of IITs.

The spatial and temporal assessment of the water resources availability is a very exhaustive exercise because of the inherent natural variability as well as the human development of water resources in the form of small, medium and large-scale diversion and storage projects and the groundwater development. All these manmade interventions have some impact on the hydrology of the drainage area. Therefore it is imperative to use mechanism to evaluate this very complex cause and effect relationship between all these entities so as to arrive at tradeoffs for better management of the water resources.

Hydrologic modeling of the Ganga Basin has been undertaken using the SWAT model and MODFLOW has been deployed for the groundwater modeling. The models have been calibrated and validated using the observations under the present conditions. The validated models have been used to simulate the conditions that would have prevailed under the pre-development era. The generated information is an asset for water resources planning and management through the system analysis; monitoring and evaluation for the hydrological health of the system and also for formulating policy instruments through the generation of a range of plausible scenarios.



Greg Koch

Tues 13 Sep, 9:30am

Greg Koch is a globally recognised leader in water resource management, driving Coca-Cola's global water stewardship program across some

1,000 facilities and numerous agricultural supply regions.

Greg and the program focus on water use efficiency and wastewater management in production facilities; watershed protection and climate change adaptation; community water initiatives; supply chain water management, global awareness and action, and water policy engagement. He collaborates with bottling partners, governments, NGOs, aid/development agencies and communities throughout the Coca-Cola system.

Keynote presentation: Collective action on the Yangtze: Is China's 'silent spring' enabling water security?

Starting with China's 12th Five-year Plan (2011–2015) and accelerating with the 13th, the government has strongly focused on the environment tied to economic development under the principal of 'quality growth.' Water, in particular has been a focus, with targets on reductions in pollution and increases in efficiency and productivity (such as 'more crop per drop'). Alongside these efforts, the government has been more strict issuing pollution fines and broadening the remit of the courts, including civil tort reform. The media has followed suit giving the public greater transparency. Awareness of water challenges, growing concern of pollution and scarcity, and demand for action by the public has brought China into their own 'Silent Spring.' In this setting, The Coca-Cola Company and their conservation partner WWF, are building on their nine-year history of work on the Yangtze River to significantly scale the scope and intended impact of efforts toward a secure Yangtze. Progress and challenges to date will be reviewed followed by on-going and planned work. The critical theme of collective action will be highlighted across actors from government, civil society and the public, to industry and agriculture. Two key questions will be addressed throughout: (1) can this fast-maturing 'silent spring' catapult actions on the Yangtze?; and (2) what unique role can industry play?



Kate Lazarus

Mon 12 Sep, 11:15am

Kate Lazarus leads the International Finance Corporation's (IFC) hydropower advisory program in Asia. Since 2012, she has developed

and managed an advisory program on environmental and social standards for the hydropower sector in Asia including Lao PDR, Myanmar, Nepal and Pakistan. This program engages the private sector to help raise standards and lower development impacts. Kate was instrumental in developing the ground-breaking Hydropower Developers' Working Group in Lao PDR, which will soon be established in Myanmar. Her expertise spans water and hydropower governance, multi-stakeholder dialogues, water resources management, cumulative impact assessment and management, human rights, and policy-level advice.

Kate has extensive experience working in the Mekong and Himalaya regions, with particular emphasis on China, having also worked for the CGIAR Challenge Program on Water and Food; managed a program on advancing sustainable hydropower in the Mekong; coordinated the Mekong Program on Water Environment and Resilience (M-POWER); led the International Union for Conservation of Nature's Regional Water and Wetlands Program for Asia; and worked as a Regional Program Officer for Oxfam America. She is the editor of the book *Water Rights and Social Justice in the Mekong*; lead author of the chapter *Negotiating Flows in the Mekong in Politics and Development in a Transboundary Watershed: The Case of the Lower Mekong Basin*; and co-author of the chapter *Demarginalising the Mekong River Commission in Contested Waterscapes in the Mekong Region*.

Keynote presentation: Effectively governing the hydropower sector: a call for a basin-wide perspective

To meet growing energy demands, countries worldwide are rapidly developing their untapped hydropower potentials creating new challenges for the management of their river systems. Faced with increasing environmental and social risks, there is an urgent need to improve policy and institutional frameworks in the hydropower sector that consider basin-wide or cumulative impacts and to build capacity. Whereas there has been progress, there are still significant challenges in coordination between the public and private sector agendas and implementation between projects in basins where multiple projects exist.

Effective governance in the hydropower sector requires all stakeholders to play a role to ensure inclusivity and accountability. This keynote address calls for action to improve governance of the hydropower sector through better public-private sector cooperation and effectively engaging all stakeholders including civil society. Through examples and lessons learned from hydropower sectors across Asia, the speaker will share how good governance of the hydropower sector requires a commitment to build capacity and how it can be achieved best through a holistic, basin-wide approach whereby the private sector plays a key role.



David Molden

Mon 12 Sep, 9:30am

Dr David James Molden is the Director General of the International Centre for Integrated Mountain Development (ICIMOD), an intergovernmental

knowledge organisation dedicated to mountains and people of the Hindu-Kush Himalayan region. Dr Molden is a research for development specialist with skills in water resource management and sustainable mountain development, with an interest in integrating social, technical, and environmental aspects of natural resources management. He has experience in leading and implementing development and research work across Asia and Africa, and is now working at the interface of science, policy and practice to help bring knowledge into use for societal benefits. Prior to joining ICIMOD in 2011 he was the Deputy Director General for Research at the International Water Management Institute (IWMI). He has contributed to the publication of over 200 works in books, refereed journals, research reports, the media, and educational materials, and has received many awards, including the Outstanding Scientist Award of the Consultative Group on International Agricultural Research (CGIAR) in 2009.

Keynote presentation: Changes in the Hindu Kush Himalayan Cryosphere (Glaciers) and what it means for the mountains and downstream

The Hindu Kush Himalayas (HKH) cover the mountains and associated hills of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan, is the source of 10 major river basins serving over 200 million people in the mountains and 1.3 billion people downstream. With reports of rapidly melting glaciers, there is concern about changing hydrology of these river systems and economic and environmental impacts. Moreover, the region is in a state of socio-economic flux, with high outmigration and globalization. This presentation shows the importance of the HKH mountains, outlines ongoing physical and socio-economic changes, and reviews the rapidly growing scientific evidence on the HKH cryosphere and associated downstream hydrology. Studies show that while the HKH cryosphere is undergoing rapid change, there may not be significant change in the total annual water volume in rivers at the basin scale, but people closer to glaciers are likely to be adversely affected, and that natural storage is being lost. Other social and climate change influences could lead to increased flood and drought hazards, and changes in local water sources. The presentation draws out implications of these changes for socio-economic development in the region.



Rajendra Singh

Wed 14 Sep, 3:50pm

Rajendra Singh is a highly regarded water conservationist from Alwar district, Rajasthan in India. Also known as the 'waterman of India',

Rajendra won the Stockholm Water Prize, an award known as 'the Nobel Prize for water', in 2015. Previously, he won the Ramon Magsaysay Award for community leadership in 2001 for his pioneering work in community-based efforts in water harvesting and water management. He runs an NGO called 'Tarun Bharat Sangh' (TBS), which was founded in 1975 and has been instrumental in fighting slow bureaucracy, lobbying on mining and helping villagers take charge of water management in the semi-arid areas through johads, rainwater storage tanks and other innovative techniques. Starting from a single village in 1985, over the years TBS helped build over 8,600 johads and other water conservation structures to collect rainwater for the dry seasons, has brought water back to over 1,000 villages, and has revived five rivers in Rajasthan, Arvari, Ruparel, Sarsa, Bhagani and Jahajwali.

Rajendra is one of the members of the National Ganga River Basin Authority (NGRBA), which coordinates planning, financing and monitoring for the Ganges (Ganga). In 2008, The Guardian named him among its list of '50 people who could save the planet'. In the UK, he is a founder membership of an NGO called the Flow Partnership which aims to counter the negative effects of soil erosion and flooding.

Keynote presentation: River rejuvenation in India

With over 28 years of working in Alwar region, Rajasthan we have revived 7 rivers, dry for eighty years by building more than 12,000 Johads at strategic points. The area has dramatically transformed, progressively becoming more productive, and healthier. Major impacts of this sustained work have made the area a 'water surplus zone' with recharged aquifers, much improved ground water levels and more surface water. Using the inherent capacities of the community as well as introducing appropriate modern knowledge, it has also strengthened those communities' capacity to adapt to existential threats such as climate change. Can this unique strategy of community-driven, decentralised water management, conservation and river rejuvenation be replicated nationally and internationally?

KEYNOTE SPEAKERS



Leena Srivastava

Mon 12 Sep, 9:00am

Dr Leena Srivastava is the Vice-Chancellor of TERI University, New Delhi – a uniquely inter-disciplinary higher education institution, focussed on

sustainable development. She is a member of various committees and Boards both at the international and national levels, including the Advisory Board to the President of ADB on Climate Change and Sustainable Development, the Administrative Board of the Sustainable Energy for All Initiative, BhartiInfratel, Meridian Institute, USA, and the Stockholm Resilience Centre, Sweden. Dr Srivastava is on the Editorial Boards of several international journals dealing with energy and environment issues and has a number of publications to her credit. She has done her Masters in Economics from the University of Hyderabad and a PhD in Energy Economics from the Indian Institute of Science in Bangalore, India.



Peter Wallbrink

Mon 12 Sep, 2:30pm

Dr Peter Wallbrink is the Research Director for Basin Management Outcomes at CSIRO, Australia's Commonwealth Scientific and Industrial

Research Organisation. The Basin Management Outcomes program has an international outlook, and aims to deliver impact and value in the area of integrated water resource management. It has a focus on achieving triple-bottom-line outcomes at the basin scale and seeks to apply its knowledge, tools and processes to a range of large basins in Australia and abroad. He is currently leading a significant portfolio of projects in South Asia with the aim of linking water management decisions to livelihood outcomes.

Peter has significant experience in developing tools and technologies to support basin scale planning, management and use of water, as well as in developing information platforms, standards and architecture to underpin planning and management processes. He has published more than 110 peer-reviewed articles in a diverse range of discipline areas, including soil erosion, sediment generation and redistribution dynamics, land use impacts on water quality, river hydrology, and best practice in applying water management modelling.

Keynote presentation: Towards enabling outcomes from basin planning processes – lessons & observations

There are many important outcomes in large basins that can be supported by well-executed Basin Planning processes. However, there are also significant barriers to the design and implementation of a plan, and success is not always certain. In this presentation, produced in collaboration with Geoff Podger, Carmel Pollino and Richard McLoughlin, we reflect on five issues that appear critical to achieving any intended outcomes. These issues are: (i) the need to consider Institutional and policy barriers to implementation, ie is there multi-party political will to achieve improved water management outcomes, and is there adequate legislation in place to deliver the policies? (ii) Are the institutional and stakeholder arrangements in place (and of sufficient capacity and maturity) in order to understand, negotiate and implement any benefit sharing (ie trade-offs) arrangements? (iii) Has the physical connectivity of the system been considered as well as an ability of water managers to cope with risks and shocks (ie floods and droughts)? (iv) socio-economic issues and livelihoods appear of equal importance to environmental/engineering concerns, and that culture and gender are becoming increasingly important, and finally (v) the observed path of practitioners tends towards model complexity to deal with multiple and dynamic water management objectives; this can be at the expense of more simple, and fit for purpose planning approaches.



Avinash Tyagi

Wed 14 Sep, 1:30pm

Avinash C Tyagi is the Secretary-General of the International Commission on Irrigation and Drainage (ICID), having worked in the water resources sector

within the Government of India for 28 years at the Central Water Commission (CWC), Inter-state Tungabhadra Board, and Ministry of Water Resources. He also currently coordinates the UN-Water Thematic Priority Area on Water and Climate Change. Avinash was previously the Director of the Climate and Water Department of the World Meteorological Organization, a specialized UN Agency, and was responsible for providing support to the countries in the field of water resources management including flood management and adaptations to climate change particularly in the water and agriculture sectors. Here, he spearheaded a major initiative on climate change with a vision to establish a Global Framework for Climate Services to support various development sectors, including the water and agriculture sector in climate risk management; established an international program on flood management developing the concept of Integrated Flood Management; and developed an international program on Integrated Drought Management in close collaboration with various international partners. Avinash has been involved in the investigations, planning and design of irrigation and flood management projects, development of the National Water Policy (2002), and operation and management of one of the major inter-state multi-purpose projects. He was closely associated with the formulation of the Andhra Pradesh Participatory Irrigation Management Act 1997, and was instrumental in initiating Benchmarking of Irrigation Systems in India.

International RiverFoundation

The International RiverFoundation champions integrated river basin management for the restoration, protection and sustainable management of the world's rivers.

Water is crucial for all life—and we need healthy rivers, lakes and wetlands for sustainable development. We promote and support effective management of these resources by facilitating knowledge sharing, education and best practice river basin management, and by recognising and rewarding those making a difference.

We draw upon our large networks, and seek to build new ones, to revive the world's rivers through multi-sector partnerships around the world. We are committed to supporting positive ecological, economic and social outcomes through our programs, which aim to change the lives of individuals and communities.

www.riverfoundation.org.au



OUR PROGRAMS

Riversymposium

A global forum for river managers, policy developers, scientists, consultants, students, NGOs, indigenous and community organisations and business & industry representatives.

Riverprize

The world's foremost award in river basin management.

Twinning

Twinning pairs Riverprize winners with communities who can benefit from their knowledge

Scholarships, fellowships and grants

- Ken Thiess Memorial Scholarship
- Vera Thiess Fellowship for Women
- Riversymposium sponsored delegates

Emerging River Professional Award

Recognising those in the early stages of their careers in rivers.

Women and Water

A forum to advance understanding of gender roles and their influence on managing the world's water

River Recovery

Integrated, on-ground programs assisting communities to revive the health of their rivers and improve livelihoods

We envision
a future in which people
and ecosystems benefit
from sustainably
managed rivers

RIVEREXPO FLOOR PLAN

SHAHJEHAN HALL, TAJ PALACE HOTEL, NEW DELHI

Hall: 34m (L) x 22m (W) x 4.2m (H)
Booths: 6m x 3m



SPECIAL EVENTS

Women and Water

Sun 11 Sep (PM) 19:00–22:30

SOLD OUT

Mumtaz Mahal, Taj Palace Hotel

Understanding gender roles is important in managing the world's water, recognised by the United Nations and proven to result in more efficient water management. In the developing world, women are often the principal water managers at the family level—but have been frequently excluded from high-level decision. Women and Water provides a forum for perspectives on the significance of rivers and waters to gender and culture, recognising women as agents of change and plan for a more equitable water future. The event will feature a panel discussion alongside informal networking, food and drink.

Proudly sponsored by



Riversymposium welcome reception

Mon 12 Sep (PM), 17:30 – 20:00

Tickets: AU\$33 (Tier 1) / AU\$65 (Tier 2)

Shah Jehan, Taj Palace Hotel

The Riversymposium welcome reception offers the change to connect with delegates from around the world in a relaxed social setting. After the conclusion of sessions on day one, join fellow delegates for an informal and warm welcome over food and beverages, within the RiverExpo area.



Water for equality and wellbeing in Asia – Breakfast Event

Tue 13 Sep, 07:00–08:30

SOLD OUT

Mumtaz Mahal, Taj Palace Hotel

In India, 60 per cent of the population lack access to toilets. In Southeast Asia, this amounts to one billion people. Poverty in this region is a central concern, where death and disadvantage occur in part through lacking access to clean, safe water—which is a key intervention for primary health prevention. The United Nations seeks to address this limitation in one of its 17 Sustainable Development Goals: 'to ensure availability and sustainable management of water and sanitation for all'. To respond and contribute to the technology, behavioural change and systems thinking behind this goal, The University of Queensland has established an initiative on water, health and sustainable development.

A panel discussion will investigate the contribution that water researchers can provide on water, sanitation, health and beyond to the Asian region, facilitated by Associate Professor Eva Abal, Program Director of the Sustainable Water Program at The University of Queensland's Global Change Institute. An active discussion with audience members will be facilitated at each table over a catered breakfast.



Riverprize Gala Dinner

Tue 13 Sep (PM), 18:30 – 23:00

Tickets: AU\$80 (Tier 1) / AU\$160 (Tier 2)

Taj Palace, Hotel

Riverprize is a prominent environmental award giving recognition to those who have developed and implemented outstanding, visionary and sustainable programs in river management and restoration. The Riverprize Gala Dinner is the highlight of the Riversymposium social program, bringing award finalists, conference delegates, IRF partners and VIPs together for a night of networking, entertainment, food and drinks—and, of course, the announcement of the 2016 International Riverprize, Emerging River Professional Award and Vera Thiess Fellowship winners!



SPECIAL SESSIONS

Hindu-Kush Himalayas: The role of mountains in water security

Mon 12 Sep, 10:30–12:00

The Hindu Kush Himalayas are called the water towers of Asia as it is the source of ten major rivers, and has the largest snow and ice deposit outside of the two Poles. Waters emanating from the Hindu Kush Himalayas provide food, energy and ecosystem services to up to 1.3 billion people. Climate change coupled with socio-economic and demographic changes have put unprecedented pressure on these water resources, leading to uncertain supplies, increased demands and higher risks of extreme events like floods and droughts. These changes have massive implications for livelihoods and infrastructure in the region.

This session will discuss the impacts of climate and other changes on glaciers, river flows and infrastructure like hydropower. It will also discuss how local communities are coping with and adapting to water related stress and its implications for upstream-downstream linkages.



River basin planning and strategic water management in Asia: prospects for the 21st century

Mon 12 Sep, 13:30–15:00

Asia is home to many of the world's most iconic rivers, including the Yangtze, Ganga, Indus, Ayeyarwady, Brahmaputra and Mekong. These basins hold unique historical, economic, cultural and ecological assets. They are among the most inspiring and exciting places on the planet.

These rivers face an uncertain future. Many countries in Asia are undergoing rapid and profound change. Population growth, economic development, political uncertainty, the rise of a new middle class and climate change will combine to accentuate difficult choices ahead on food and energy security, water scarcity and allocation, infrastructure development, pollution control and ecosystem health. One of the great global challenges for the 21st Century revolves around whether or not governments, communities, businesses and other stakeholders in Asia can find a pathway to sustainable development despite these challenges.

A number of recent innovations in river basin planning and strategic water management might provide unprecedented opportunities to help address the challenges. This session will explore how these innovations might help Asia plan and manage rivers and water resources to facilitate positive development outcomes throughout the rest of the 21st century.

Presentations will include reflections and interactive discussion on the potential applicability of the following innovative approaches in Asian river basins:

- Helping key stakeholder to gain a better understanding of the inter-relationship of different water-related economic risks in the Brahmaputra and Mekong rivers
- A recent global review undertaken by the Chinese government and WWF of lessons on key strategic water management themes (basin planning, water allocation, flood and drought risk management and river restoration)
- Efforts to strategically plan future hydropower development in Myanmar and to map fragmentation along the Ayeyarwady
- On-the-ground experiences such as:
 - implementing basin planning and environmental flow allocations in the Ganga basin
 - large-scale river and lake restoration in the Yangtze
 - mobilising economic actors in the Indus using concepts of water risk and stewardship



Advancing hydropower governance across Asia

Mon 12 Sep, 15:30–17:00

To meet growing energy demands, countries worldwide are rapidly developing their hydropower potentials creating new challenges for the management of their river systems. Faced with increasing environmental and social risks, there is an urgent need to improve policy and institutional frameworks in the hydropower sector to consider basin-wide or cumulative impact, particularly where multiple projects exist. Whereas there has been progress, there are still significant challenges in earning public acceptance, and in reconciling public and private sector agendas when taking decisions about whether or not to proceed with projects, and in negotiating options for project designs and operating regimes.

Fair and effective governance in the hydropower sector requires enabling representatives of all stakeholders to meaningfully engage in hydropower decision making. This session will address calls for action to improve governance of the hydropower sector in South Asia and East Asia through better more inclusive and informed public-private-civil society engagement. Through examples and lessons from the development of hydropower on the rivers that flow out of the Hindu Kush Himalayan (HKH) Region the session will explore some aspects of current hydropower governance – including concessioning, and impact assessment – and make the case for taking holistic, basin-wide approach.

Co-Chairs:

- Mr Dipak Gyawali, former Minister of Water Resources and Pragna, Nepal Academy of Science and Technology, Nepal
- Dr Leena Srivastava, Vice-Chancellor of The Energy and Resources Institute (TERI), India

Strategic Environmental and Social Assessment (SEA) in hydropower governance in Myanmar

- Dr San Oo, Director EIA, Environmental Conservation Department, Ministry of Natural Resources and Environmental Conservation, Myanmar

Governing hydropower in Watersheds in Pakistan

- Mr Farhat Ali Mir, Secretary, Forests and Fisheries, Pakistan
- Dr Anis ur Rahman, Himalayan Wildlife Foundation, Pakistan

Reflections & Facilitated Discussion

- Chanthaboun Soukaloun, Deputy Director General, Department of Energy Business, Ministry of Energy and Mines, Lao PDR
- Aditi Mukherji, International Centre for Integrated Mountain Development, Nepal



Asia-Pacific water stewardship

Tue 13 Sep, 09:00–17:00

The Asia-Pacific Water Stewardship Forum is a unique opportunity to advance the understanding and impact of AWS water stewardship in the Asia-Pacific region, and to contribute to the further development of water stewardship at a global level. The AWS International Water Stewardship Standard (the AWS Standard) defines global best practice in water stewardship and establishes a framework for major water users to understand and improve their water use, and to effectively engage other stakeholders in pursuit of shared outcomes. The AWS Standard is gaining traction across Asia-Pacific as major water users seek to understand and take collaborative action in response to increasingly critical water challenges. Using examples from around the region, with a particular emphasis on India and South Asia, the Forum will examine water stewardship experiences in industry and agriculture in a diverse range of contexts from major international companies to local water users' associations. The relationship between water stewardship and other sustainability standards and initiatives will also be explored.

The Asia Pacific Water Stewardship Forum is co-convened by:

- India Water Stewardship Network (IWSN)
- Water Stewardship Australia (WSA)
- Alliance for Water Stewardship (AWS)

With support from the Australian Water Partnership.

Objective:

Greater opportunity for sharing issues and experiences among organizations and individuals from the Asia-Pacific region with an

interest in the implementation and/or promotion of water stewardship in a diverse range of contexts to:

- Understand the business imperatives for water stewardship across Asia-Pacific
- Increase understanding and uptake of water stewardship across Asia-Pacific
- Contextualise water stewardship from the perspective of the Sustainable Development Goals
- Provide an opportunity for intra-regional learning on water stewardship
- Strengthen collaborative opportunities between different sustainability approaches

Schedule

Inaugural session

Objectives of session:

- Highlight the "Water Stewardship" business imperatives as a key approach to participatory stakeholder engagement
- Provide context and introduction to AWS water stewardship for participants
- Frame water stewardship in the context of SDGs

Presenters:

- Michael Spencer, Chair AWS
- Ravi Singh, CEO, WWF-India, founding member IWSN
- Russell Rollason, Director, Water Sanitation Health Section, Department of Foreign Affairs and Trade, Australia

Keynote: Amitabh Kant, CEO, National Institution for Transforming India

- Business imperatives for water stewardship
- Water stewardship's role in achievement of SDGs

Session 1: Lessons from water stewardship in Industry

Objectives of session:

- Share lessons from across region on application of water stewardship in industry
- Demonstrate different value propositions for water stewardship in industry

Case studies:

- Multi stakeholder actions and cleaner technologies: lessons from Muradabad and Kanpur, India presented by WWF. India Sanket Bhale, WWF India
- Advancing water stewardship in Pakistan: Lessons from Jomshoro and Sheikupura, presented by Archroma and Nestle Pakistan. Dr Arshad Mehmood (Archroma) and Zeeshan Suhail (Nestle), via video conference
- Engaging multiple businesses in a single catchment, lessons from Changzhou Printing & Dyeing Industrial Park, China. Zhenzhen Xu, AWS Regional Director – Asia Pacific

Panel discussion on sharing experiences to advance water stewardship across the Asia Pacific region:

- Anshuman, TERI
- Rita Roy Chowdhury, FICCI (invited)
- Siddhartha Prakash (2030WRG)

Session 2: Water stewardship in agriculture value-chain

Objectives of session:

- Share lessons from across region on application of water stewardship in agriculture

- Demonstrate different ways in which water stewardship can support agriculture

Case studies:

- Lessons from group certification approaches in Australia and New Zealand, presented by Water Stewardship Australia. Michael Spencer, WSA
- Lessons from Small Farm Project, Huanghu, China, presented by Green Zhejiang. Xin Hao, Green Zhejiang
- Lessons from community water stewardship in Rajasthan, India, presented by Hindustan Unilever Foundation. Praveen Prakash, HUF
- Lessons from watershed development projects in India, presented by ITC. Sanjib Bezbaroa or Ashesh Ambasta, ITC
- Lessons from group certification approaches in Australia and New Zealand, presented by Water Stewardship Australia. Michael Spencer, WSA

Panel discussion on sharing experiences to advance water stewardship across the Asia Pacific region.

Session 3: Supporting other initiatives

Session objective: Demonstrate how water stewardship can support a range of other initiatives (standards, urban development, WASH etc.)

Case studies:

- Water stewardship & sustainable cotton production
 - Lessons from cross referencing Cotton MyBMP and the AWS Standard, presented by WSA. Megan MacLeod, WSA
 - Lessons from coastal salinity project, Gujarat, India, presented by Better Cotton Initiative (BCI). Rajeev Baruah, BCI (AWS to liaise on details)
- WAPRO Project
 - Lessons from organic rice production, Uttarakhand, India. Minu, Intercooperation Social Development India
- Lahore City Wide Partnership
 - Lessons from engaging SMEs in Lahore, Pakistan, presented by WWF Pakistan
- Ali Hasnain Sayed, WWF-Pakistan (by video conference)

Panel discussion on sharing experiences to advance water stewardship across the Asia Pacific region.

Session 4: Bringing it all together: how water stewardship can support the SDGs

Session objective: Demonstrate the value of water stewardship in achieving SDGs in Asia Pacific/South Asia context

Introductory presentations:

- Stuart Orr, WWF-International
- Suresh Kumar Rohilla, CSE

Moderated panel discussion with senior participants:

- Madhavan, WaterAid India
- Janine Kuriger, SDC
- Government of India representative



Civil society and transboundary water management experiences from South and South East Asia

Tue 13 Sep, 08:30–10:00

Asia's major rivers – from the Ganges and Brahmaputra to the Mekong and Salween – have defined the geography, history, and culture of countries in the region for centuries and are critical to economic growth, food and energy security, and sustainable development within the region. But over the last few decades, these rivers have come under considerable pressure from industrial development, urbanization, population growth, and environmental pollution. This situation has been compounded by poor domestic management of water resources, overuse and extraction, and increasing variability in rainfall and climate patterns that have made South and South East Asia highly susceptible to floods, droughts, and natural disasters. In an environment of growing uncertainty, effective management of ground and surface water is critical to mitigating climatic, economic and social impacts.

To date, much of the debate on transboundary water issues in countries in the region, has been led by governments with limited space for civil society engagement. However, there is sufficient evidence to suggest that civil society engagement is crucial to a more productive, collaborative and constructive discussion on the issue of water security. Specifically, at a national level, civil society organizations can serve as important conduits for fostering dialogue, highlighting critical issues around environment, biodiversity, livelihoods and gender, and linking grassroots issues to national policy making processes. At a transboundary level, through their ability to engage, network and convene across borders, civil society organizations can engage with a range of stakeholders, and foster dialogue processes that support and bolster formal negotiations. In this way, civil society can serve to highlight critical issues on water security, foster collaborative relationships and partnerships that transcend borders and in so doing deescalate tensions around regional cooperation on water.

Led by The Asia Foundation, the moderated panel discussion will bring together civil society practitioners and public policy experts from South and South East Asia to discuss the ways in which civil society engagement on water-related issues in the region has and can play a constructive role in fostering improved management and regional cooperation on water.

Some of the core questions the panel will seek to address include:

- The role that civil society has and can play to the current nature of the discourse.
- Reflections on civil society's role in transboundary water management in South Asia versus South East Asia.
- Impediments to constructive engagement by civil society and how civil society can be seen as a trusted partner.

SPECIAL SESSIONS

- The appropriate level (regional, national, sub-national) and domain (science, politics, culture etc) of engagement for civil society.

Moderator: Mandakini D. Surie, Senior Program Officer, The Asia Foundation

Panelists:

Mr Ajaya Dixit, President, ISET-Nepal;
Ms Socheata Sim, Oxfam Mekong Regional Water Governance Program; Ms Anamika Baruah, Associate Professor, Indian Institute of Technology, Guwahati; Mr Uttam Kumar Sinha, Research Fellow, Institute for Defence Studies and Analysis



The Asia Foundation

Indus, Ganges and Brahmaputra: the future of Himalayan rivers

Tue 13 Sep, 09:00–12:00

The Himalayan rivers of South Asia are corridors of connectivity across diverse landscapes and cultures. The region is home to around a quarter of the global population but has less than 5 per cent of the world's renewable water resources. Low per capita water availability and a high relative level of water use makes South Asia one of the most water scarce regions of the world. Additionally, water storage is low by global standards, making it difficult to manage the floods and droughts that characterise the region and that are expected to increase with climate change. Scarcity is now beginning to impact on economic development, as competition for water among different sectors increases, while the food demands of growing population continues to rise. All countries in the region are recognizing the need for vastly improved management to support sustainable development and reduced impacts from flooding.

The World Bank's special half-day session aims to consider these challenges as they pertain to the future management of the major Himalayan River basins. A combination of invited keynote lectures, high-level panel discussions, speed talks and facilitated Q&A session will both provide up to date case studies, share government perspectives and provide forum for open discussion.

Opening and Welcome

Dr Bill Young, World Bank

Sustainable Development and Management of the Great Himalayan Rivers

Presenters: Dr David Molden, ICIMOD (Upper Basin), Dr Jeremy Bird, IWMI (Lower Basin)

Moderator: Dr Bill Young, World Bank

Plenary/Q&A

Moderator: Dr Bill Young, World Bank

Speed Talks

Presenters: Prof Shakil Romshoo, Kashmir University (Indus); Mr Kees Bon, Deltaraes (Ganges); Dr Anamika Baruah, IIT Guwahati (Brahmaputra)

Moderator: Dr Halla M Qaddumi, World Bank

Plenary/Q&A

Moderator: Dr Halla M Qaddumi, World Bank
Water Security Concerns in South Asia

Presenter: Prof David Grey (Oxford University)

Moderator: World Bank

Discussion

Moderator: World Bank

National Progress on River Basin Planning (Panel Discussion: Bangladesh, Bhutan, India and Nepal)

Chair: Shri Shashi Shekhar, Secy, Ministry of Water Resources, River Development and Ganga Rejuvenation, India

Panelists

Moderator: Ambassador Tariq A Karim, Former Diplomat/World Bank

Plenary Q&A

Moderator: Ambassador Tariq A Karim, Former Diplomat/World Bank



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Keeping rivers alive: forum knowledge to practice

Tue 13 Sep, 15:30–17:00

Free-flowing rivers – rivers that maintain a high level of connectivity and natural flows – are the freshwater equivalent of terrestrial wilderness areas. In many places, free-flowing rivers are crucial for carrying sediment downstream, bringing nutrients to floodplain soils, maintaining floodplains and deltas that protect against extreme weather events, and providing recreational opportunities or spiritual fulfilment. Almost everywhere that free-flowing rivers remain, they are home to vulnerable freshwater biodiversity. However, the world is in the midst of a global hydropower boom – particularly in the global South – such that free-flowing rivers are under threat and likely to become even rarer than they currently are. In this session we will explore efforts to identify high conservation value free-flowing rivers, efforts to restore environmental flows and policy and regulatory issues across the globe to keep rivers connected and free-flowing. Drawing from experiences at local, national and global scales, this session will discuss approaches and strategies and potential road map to keeping rivers connected.

Session Chair: Dr Dave Tickner, WWF-UK

Presentations:

- Global mapping of free-flowing rivers: Preliminary results for review – Dr Guenther Grill, McGill University
- Wild rivers of Uttarakhand – Suresh Babu, WWF-India
- The Mexican environmental flows and water reserve standards: an innovative mechanism for protecting rivers – Rafael Sanchez Navarro, representing WWF-Mexico

- Case studies of protection mechanisms for rivers – Michele Thieme, WWF-US



The role of EFlows in broad-based basin planning for hydropower in Asia

Wed 14 Sep, 08:30–10:00

While project-scale efforts to protect river ecosystems are important, embedding these in the context of a wider basin or regional-level approach is crucial, allowing the cumulative impact of multiple developments to be better understood and enhancing the prospects for cooperation and sustainability. EFlows assessments are a key part of this exercise and have often been the vehicle through which IWRM activities have been integrated basin-wide, but the investigations and potential solutions range far wider than the simple management of flow.

This session will explore the use of EFlow assessments in basin-wide hydropower planning; challenges and opportunities, including tools, non-flow related issues, building partnerships, and negotiating purchasing and other agreements to promote sustainability.

Discussion will follow presentations to agree on common goals towards the inclusion of environmental and social criteria in basin-wide hydropower planning.

Moderator: Dr Pablo Cardinale, IFC

Presenters:

- Dr Brij Gopal: The need for, and practicalities of, EFlows assessments as part of cumulative impact assessment of hydropower in India
- Prof. Cate Brown: EFlows inputs underpin sustainable hydropower deliberations in the Jhelum Basin, Kashmir
- Prof. Chris Gippel: Fitting environmental flow assessment into planning and management of hydropower development at large scales – methodological issues illustrated with examples from Asia and South America



International Finance Corporation
WORLD BANK GROUP

Demonstrating the links between science and policy: basin planning in the Brahmani Baitarani Basin, India

Wed 14 Sep, 08:30 – 10:00

This session is about sharing the experiences of collaboration between India and Australia in exercising a basin scale water resource management and planning approach. The project started in late 2013 under the auspices

of the Memorandum of Understanding on water between the governments of India and Australia. The basin selected was the Brahmani Baitarani Basin which spans three states, Chhattisgarh, Jharkhand and Odisha in the north-east of India. This session includes lessons learnt during the implementation of the project and the major outcomes in capacity building and in exploring future planning options for the basin's water and agricultural resources. Speakers representing the various jurisdictions within the basin, including State and Central government, will provide their perspectives on the path towards improved water resource management and how better outcomes can be achieved for all basin stakeholders.



Informing change in the Indus Basin: knowledge sharing and cross-basin learning to support stronger transboundary management

Wed 14 Sep, 10:30–12:00

At this meeting, we will explore ways of enhancing knowledge sharing and generation in the Indus Basin towards more inclusive and accountable transboundary water governance. It will bring together key experts, government officials, and civil society groups from all the four riparian countries Afghanistan, China, India and Pakistan to discuss and create common understanding of current challenges and potential pathways for meaningful engagement.

A panel discussion on 'Learning from other basins on strengthening knowledge sharing for cooperation', will explore ways in which cross-basin learnings from the Mekong, Nile and other rivers basins can help support knowledge management and development in the Indus Basin.

It will also feature a new Indus Basin Knowledge Platform (IBKP) which has been developed as a one-stop 'knowledge shop', allowing decision makers and the wider public access to information on the basin, which will inform and enable more effective responsive to multiple development challenges.

The meeting is being convened by IWMI under its Informing Change in Indus Basin (ICIB) programme. ICIB seeks to consolidate existing knowledge on the Indus basin, improve understanding of decision making processes, and promote cooperation and facilitate basin-wide dialogue between all countries sharing this basin.



Managing drought and water scarcity: Do key principles transcend basins, regions and nations?

Wed 14 Sep, 10:30–15:00

Over 1.7 billion people are currently living in river basins where water use exceeds recharge. Demand for water will increase as populations grow and incomes rise. In many areas, this will be compounded by acute drought and climate change impacts, further increasing the numbers of people impacted by water scarcity. Consequently, building resilience to scarcity and drought need to be seen as an integral component of water security planning for economic growth. This will require innovative allocation, demand management and reuse policies, complementing the traditional approach of building additional or more reliable, water supply infrastructure. This workshop will focus on determining which of the solutions to water scarcity adopted by Australia may be adaptable for use in south and south-east Asia.

Key issues for discussion will include water scarcity planning, growing and diversifying water supplies, reforming the efficiency of water allocation, improving the benefits of water use, seeking multi-benefit stakeholder solutions and improving scarcity related hydro-meteorological data and forecasting.

AUSTRALIAN WATER PARTNERSHIP - HELPING TO MANAGE WATER SCARCITY IN THE INDO-PACIFIC -

The river basin report card game – understanding stakeholder decision-making

Wed 14 Sep, 13:30–15:00

An interactive role-playing game has been professionally designed to engage multiple stakeholders in using report cards to help inform decision-making in river basins. Participants role play as policymakers, natural resource managers, non-government organizations, companies, community representatives, or other stakeholders. Role-playing allows participants to experience different perspectives and competing demands as they make decisions for managing a fictitious river basin. Decisions made impact the basin in different ways, which are reflected by report card scores for Water Quality & Quantity, Ecology, Health & Nutrition, Economy, Management & Governance, and Social & Cultural values. In-turn, report card scores will influence further decision-making throughout the game as players and teams compete to achieve the highest score individually and as a team.

Participants will gain a better understanding of how stakeholder-based report cards can be used to enhance river basin management.



Developing effective fish passages for South-East Asian and Himalayan hydropower projects

Wed 14 Sep, 13:30–15:00

Development of large hydropower projects (HPPs) in SE Asian rivers, particularly in the Himalayas, is increasing rapidly. Maintaining connectivity and genetic diversity of migrating fish species is a major goal of sustainable HPPs, particularly those funded by the International Finance Corporation and other major lending institutions. Well-conceived fish passages can contribute greatly to this goal. This session will explore fish passage designs and provide examples of successful fish ladders applicable to SE Asia. Particular issues that will be addressed include: 1) Key design elements for successful fish passages in SE Asia and the Himalayas, 2) Downstream fish passage considerations and options, and 3) Alternatives for maintaining migration and/or genetic diversity if a fish ladder is not feasible. Discussion will follow presentations to assess the current state of fish passage in SE Asia and to evaluate novel approaches that may be appropriate for the region.

Agenda

Moderator: Leeanne E. Alonso, PhD Biodiversity Specialist, IFC
Brett Towler, PhD US Fish and Wildlife Service.
Topic: International good practice for fish passage design and operation

Halvard Kaasa, PhD SWECO
Topic: Considerations for fish passage design and operation in Nepal and the Himalayas
Malavanh Chittavong, PhD National University of Laos, Lao PDR
Topic: Experience with fish passage design and operation in Lao PDR and the Mekong region.
Ashok Baniya, MSc. Nepal Water and Energy Development Company
Topic: Fish passage options for the Upper Trishuli-1 Hydroelectric Project, Nepal



Integrated Ayeyarwady river basin management in a transforming Myanmar

Tue, 12 Sep, 13:30–15:00

Myanmar is well underway with a series of water sector reforms and associated river basin management initiatives. This session is an opportunity to hear from Myanmar colleagues intimately engaged in what is a period of substantial transformation.

Myanmar National Water Resources Committee Secretariat

Hydro-Informatics Centre (HIC) in Myanmar

AUSTRALIAN WATER PARTNERSHIP - HELPING TO MANAGE WATER SCARCITY IN THE INDO-PACIFIC -



STUDY TOURS

Explore the unique ecosystems of the Sundarbans mangrove forest and wildlife sanctuaries

Thu 15 – Sun 18 Sep

Departs: Kolkata, 12 Noon

Tickets: AU\$895

The Sundarbans tour is a unique opportunity for delegates to experience the world's largest mangrove forest, renowned for its seven main rivers, numerous other water courses, wildlife reserves, and diverse range of flora and fauna. Part of the Ganges Delta, the Sundarbans region covers 140,000 hectares of Bangladesh and West Bengal (India) in lush biodiversity and is listed by UNESCO as a World Heritage Site. Its numerous water courses form a broad network of channels in the Sundarbans, influenced by flow tides and a range of hydrological factors.

Travel from Kolkata through the forest's many rivers and creeks, experiencing the cultural heritage and influence of forest and its rivers on everyday life. The tour is predominantly by boat, anchoring in a variety of key cultural and scientific destinations—including the famous Bhagabatpur Crocodile Sanctuary and Lothian Island Wildlife Sanctuary.

This tour is proudly sponsored by



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Yamuna: healthy rivers, healthy villages

Thu 15 Sep

Departs: Taj Palace, New Delhi

Tickets: AU\$210

The Yamuna is the longest tributary of the Ganges, covering 40.2 per cent of the entire basin. Along it are dozens of diverse river communities, who rely on the Yamuna for irrigation, religious significance, bathing and more. Despite the river's high pollution levels, the government of India has announced plans to rebuild and repair its sewage system and the drains that empty into the river. Delegates will visit the Somb-Thapana river catchment and gain valuable education on Indian river systems, with emphasis on communities' river restoration work through concerted conservation efforts and catchment restoration plans.



www.csiro.au



CSIRO is working both nationally and internationally to help inform policies and strategies for supporting effective water resource management. The aim is to improve the livelihoods and economic well-being of people in large and complex river basins, currently in Australia, Asia, the Pacific and South America.



Comprehensive scientific assessments of current and future water availability in major water systems.



Intelligent and effective water management in regions of increasing demand due to population growth.



Improving access to safe water in highly variable and changing climates.



A global leader in the provision of advice, information, modelling, insights and technology for water management.



Identifying scientific relationships between river flows and the ecological assets and the livelihoods that they support.



Long-term collaborative relationships with international governments, water agencies, research institutions and industry.

AWARDS

EMERGING RIVER PROFESSIONAL AWARD

Three finalists from Australia and Finland have been shortlisted for the 2016 Emerging River Professional Award for their efforts to sustainably manage rivers and water.

An initiative of the International RiverFoundation, the Emerging River Professional Award (ERPA) recognises and fosters early career river professionals who have demonstrated innovation, excellence and leadership in the areas of rivers, basins, or river-dependent communities. Last year it was awarded to Tom Scarborough, Estuary Planning Coordinator for the Corangamite Catchment Management Authority in Australia, for improving community awareness and understanding about the causes of acid discharges and fish deaths in the Anglesea River.

The ERPA is generously sponsored by OceanaGold Corporation and the process is managed by the International WaterCentre Alumni Network (IWCAN).

The winner will receive a cash prize of AU\$5,000.



2016 FINALISTS



Lee Garnett (Australia), for her work on whole of catchment urban water resource management in Queensland. Lee manages seven stormwater harvesting schemes across Brisbane City, which are projected to save 185 million litres of potable water per annum.



Tero Mustonen (Finland), for his work incorporating traditional knowledge and science to monitor and restore watersheds in North Karelia, Finland. Tero is a post-doctoral researcher with the University of Eastern Finland and also a professional fisher, and has effectively incorporated traditional knowledge in monitoring and restoring river basins.



Jaime Ruprecht (Australia), for his work on acid sulfate soil remediation in New South Wales. Jamie is a Project Engineer at the Water Research Laboratory at the University of New South Wales, and is currently conducting several large wetland restoration projects.

VERA THIESS FELLOWSHIP

The International RiverFoundation's Vera Thies Fellowship for Women gives women the opportunity to gain valuable work experience through the IRF and its partners, with the goal of advancing women's participation in water and river management. This fellowship goes not only towards supporting a scholar, but towards continuing the important work of bridging the gap in women's participation in river basin management.

Awarded in the name of the late Vera Thies, a long-time supporter of the IRF, the Fellowship recognises Vera's and the Thies family's long-time philanthropic support and commitment to forward-looking initiatives of the International RiverFoundation. Through the Fellowship, we honour Vera's legacy by supporting women's involvement in river basin and water management. We also acknowledge the inspirational role of the Thies family, whose story began with five brothers who started a small earthmoving business that then grew into a globally respected establishment that overcame hardship, broke boundaries and forged new ground.

The 2016-17 Fellow will be announced at the Riverprize Gala Dinner.



Riverprize

THIESS INTERNATIONAL RIVERPRIZE

Three outstanding finalists hailing from Spain and the United States are in the running for the Thies International Riverprize, awarded by the International RiverFoundation (IRF).

IRF awards the globally renowned prize annually to those demonstrating outstanding results in sustainable river basin management, restoration and protection across the world. This year, the winner receives a AU\$200,000 cash prize and global recognition as a leader in sustainable river initiatives. These groups have successfully executed long-term projects that have restored the health of these rivers, and they now have a chance to win the coveted AU\$200,000 award.

The winner of the award will be announced on 13 September at the Riverprize Gala Dinner.

Riverprize *Gala Dinner*

Tue 13 Sep (PM)
18:30 for a 19:00 start
Durbar Ballroom, Taj Palace Hotel
Welcome drinks to be served in RiverExpo, Shah Jehan hall
Tickets: AU\$80 (Tier 1) / AU\$160 (Tier 2)

Riverprize is a prominent environmental award giving recognition to those who have developed and implemented outstanding, visionary and sustainable programs in river management and restoration. The Riverprize Gala Dinner is the highlight of the Riversymposium social program, bringing award finalists, conference delegates, IRF partners and VIPs together for a night of networking, entertainment, food and drinks—and, of course, the announcement of the 2016 Thies International Riverprize, Emerging River Professional Award winners and the recipient of the first IRF Vera Thies Fellowship for Women.



2016 FINALISTS



**U.S. Department of the Interior
and the Lower Elwha Klallam Tribe**

Elwha River (USA)

For millennia the Elwha River (U.S.A.) produced high numbers of Pacific salmon, an important cultural touchstone and subsistence food source for indigenous people, including the Lower Elwha Klallam Tribe (LEKT). In the early 1900s, construction of two privately owned hydroelectric dams on the river provided electricity to the region and initiated local economic development. But this progress came with a cost, impacting salmon populations and the livelihood of people that depended upon them. The two dams blocked fish migrations and disrupted river sediment transport for a century, changing the structure and function of the river. A coalition of federal, state, and tribal government groups and other stakeholders, led by the U.S. Department of the Interior, underwent a two decade process of initiating, planning, and managing the necessary steps toward dam removal and river restoration. This involved years of political processes and numerous mitigation projects, including creating new water treatment infrastructure, raising flood control levees, and upgrading wastewater treatment on the tribal reservation, as well as coordinating several environmental impact documents and management plans for environmental resources. Between 2011 to 2014 the dams on Elwha River were removed, resulting in the largest such project ever attempted, the release of millions of cubic meters of sediment downstream, and fish passage past former dam sites into protected habitats of Olympic National Park, a UNESCO World Heritage Site and International Biosphere Reserve. The project now serves as a living laboratory of cultural and ecosystem restoration as the salmon return to river.

Segura River Basin Authority and Murcia Government Regional Water Department

Segura River (Spain)

In 1986, Spain became a member of the European Union. This milestone marked an increase in the production of agriculture and canned food and, consequently, a rise in wastewater discharges and lack of water. As a result, the already water-stressed Segura River in Europe's driest basin became an exposed sewer.

The Segura River Project was developed by the Murcia Government's Regional Water Department, in partnership with the Segura River Authority and town councils in the region, to restore the health of the Segura River and to supply reclaimed water to the booming agriculture industry.

Between 2001 and 2010, 100 water treatment plants and 350 kilometres of wastewater collection systems were built. In addition, a wastewater reclamation levy was established to finance the operation, maintenance and monitoring of these systems, applying the principle "the polluter pays".

A major breakthrough was achieved in 2003 when the quality of the Segura's water started improving. Since 2010, pollution has been unnoticeable, leading to the recovery of fauna and flora including increased otter population in parts of the river they had once abandoned. Birds now rest at two recovered wetland areas recognised by the Ramsar Convention, during their migration between Europe and Africa. In addition, around 110 million m³ of reclaimed water is reused annually for agriculture in the region.

Buffalo Niagara Riverkeeper

Niagara River (USA)

Buffalo Niagara Riverkeeper is helping guide the transformation from a historical rust belt region to one that values and maintains the integrity of its fresh water systems as a major component of regional economic revitalization. Founded in 1989 by a volunteer group of environmental professionals and concerned citizens, Buffalo Niagara Riverkeeper was created out of the desire to restore and protect the Buffalo River. Through an innovative non-profit business model, Riverkeeper has grown to be one of the largest 'Waterkeeper' organisations in the world, now supporting 22 full time staff whose work touches 3,250 miles of waterways throughout the 1,400 square mile Niagara River watershed, including two of the US Great Lakes- Lake Erie and Lake Ontario.

Western New York forms a land bridge between Lake Erie and Lake Ontario, and is home to one of the most recognizable water features in the world – Niagara Falls. The region's past, present and future is directly tied to our relationship with the Great Lakes and fresh water resources. With the threat of climate change, combined with ongoing impairment of the lakes, there is urgency to shift the paradigm of how they used their watershed. Their work has evolved into a systems-level approach to securing Great Lakes watershed resiliency, with an innovative nonprofit business model that has allowed Riverkeeper to implement ground-breaking cross sector partnerships; produce innovative ecosystem and watershed planning; design, construct and monitor habitat restoration; remediate 100 years of contaminated sediment; address 150 years of sewage pollution; implement green infrastructure methodologies; enable a blue economy; and mobilize over 10,000 volunteers through its education and engagement programs.

PRINCIPAL SPONSORS

The World Bank

The World Bank is a vital source of financial and technical assistance to developing countries around the world. Helping countries achieve water security for all lies at the core of the World Bank Group's goals: to eliminate extreme poverty by 2030 and boost shared prosperity for the poorest 40 per cent. Launched in 2014, the World Bank's Water Global Practice brings together financing, implementation, and knowledge in one platform. By combining the Bank's global knowledge with country investments, this model generates more firepower for transformational solutions to the diverse water sector challenges across the developing world. Importantly the World Bank sees water sector adaptation as central to addressing the effects of climate change that are expected to disproportionately affect the poor.



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Department of Foreign Affairs (Australia)

The Australian Department of Foreign Affairs and Trade is pleased to be a principal sponsor of the International Riversymposium. Over the past seven years, India and Australia have enjoyed a growing cooperative partnership in water management. Following signing of the India Australia Water Science and Technology Partnership in 2013, Australia has been assisting river basin modelling and planning, weather forecasting and associated capacity building.

Across the Asia-Pacific region, Australia has been sharing its experience and technology in river and water management. DFAT supports the Sustainable Development Investment Portfolio in South Asia and the Greater Mekong Water Resources Program in the greater Mekong region.

In 2015, DFAT established the Australian Water Partnership (AWP) to improve access to Australian water management experience and expertise in both the public and private sectors for countries in the Asia-Pacific region. The AWP is conducting a workshop during the Riversymposium on managing drought and water scarcity.

Brisbane City Council (Australia)

Brisbane City Council manages Brisbane's waterways and natural environment to ensure it is a great place to live, work and invest.

Brisbane City Council is a founding member of the International River Foundation and host city of two Australian Riverprize winners. Brisbane is the largest local government in Australia with a population of over two million.

Brisbane is a unique, world-class city, defined by its subtropical climate and diverse natural environment. The Brisbane River is the longest river in South East Queensland, flowing through the city and providing a major recreational and natural space for residents while the Port of Brisbane handles over \$50 billion of trade per annum that supports a range of industries across Queensland.

In the last two decades, Brisbane has experienced the Millennium

Drought (1995–2009) and two significant floods (2011 and 2013). This highlighted the importance of managing water at all stages of the water cycle and has reshaped the city's relationship with water.

As a result, Council has explored a number of projects as part of its WaterSmart Strategy, including Stormwater Harvesting and Reusing systems constructed on Brisbane's sports fields and in public spaces, achieving a combined yield of approximately 400 Megalitres per year.

Council is committed to supporting the liveability of our city by managing water sustainably. Brisbane's waterways are an important natural asset that benefits the city's biodiversity, recreation and amenity by contributing directly to Brisbane's economy and social wellbeing. Council manages Brisbane's waterways so that the city remains a great place to live, work, visit and invest.



Australian Government
Department of Foreign Affairs and Trade



Dedicated to a better Brisbane

MAJOR SPONSOR

CSIRO

The Commonwealth Science and Industrial Research Organisation (CSIRO) is working both nationally and internationally to provide evidence to inform policies and strategies for supporting effective

water resource management. The ultimate aim of our work is to enable improvements to livelihoods and economic well-being of people in large river basins, currently in Australia, Asia, the Pacific and South America. It achieves this

through being a leader in the provision of advice, information, insights and tools to enable governments, water agencies and other stakeholders to effectively manage, plan and operate water resources in complex river basins.



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