

#ADBWaterWatch

WEBINARS BY THE ADB WATER SECTOR GROUP

ADB WATER AND IWMI WEBINAR SERIES

Science and Innovation for a Water-Secure Future for All



For its first webinar series in 2021, the ADB Water Sector Group is working with the International Water Management Institute (IWMI). This is a four-part series focusing on innovative approaches and tools that can contribute toward advancing water security and climate resilience in Asia and the Pacific.

Experts from IWMI will share different ways developing member countries can strengthen resilience through tested water solutions, as well as discuss water accounting and how it can help in understanding and managing the water-food-energy (WFE) nexus. Irrigation asset management will also be tackled, including presenting IWMI's SAMS4i software package that helps manage key assets and assess spatial variability. Lastly, they will zero in on the circular economy through case studies that demonstrate success.

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Part 1

Centrality of Water in Climate Resilience

2 February 2021, 3:30–5:00 p.m. (GMT +8), Tuesday

Part 2

WEF Nexus, Water Productivity, and Water Accounting

16 February 2021, 3:30–5:00 p.m. (GMT +8), Tuesday

Part 3

Sustainable Asset Management System for Irrigation

2 March 2021, 3:30–5:00 p.m. (GMT +8), Tuesday

Part 4

Circular Economy for Water Security

16 March 2021, 3:30–5:00 p.m. (GMT +8), Tuesday

Centrality of Water in Climate Resilience

2 February 2021, 3:30–5:00 p.m. (GMT +8), Tuesday



Water security is central to climate resilience. Achieving water security can help society transition toward a climate-resilient future.

First, the impacts of too little, too much, and too dirty water, and water at the wrong place and the wrong time are already felt by a majority of the world's population. More than 4 billion people are water insecure, and climate change is projected to exacerbate this water insecurity further.

Second, impacts of climate change on various components of the hydrological cycle (precipitation, evapotranspiration, soil moisture, cryospheric components, groundwater, water quality, etc.) are also affecting all major water use sectors. Agriculture is particularly affected, given it is the largest consumptive user of water, particularly in low- and middle-income countries.

Third, because water-related hazards (such as droughts and floods) are the main risks faced by millions of farmers, the majority of the adaptation and resilience options are water-focused and are reflected in NDC pledges of many countries worldwide.

Finally, several mitigation measures needed for a net zero emissions target, which countries are increasingly setting, have a high water footprint. These include hydropower, afforestation and reforestation, bio-energy and carbon capture and storage, direct air capture, and carbon dioxide removal. Neglecting the water costs of mitigation can lead to further water insecurity.

The presentations in this webinar will discuss some of the ways to build up resilience through tested water solutions, featuring perspectives from IWMI and Intergovernmental Panel on Climate Change (IPCC) scientists, followed by a discussion with ADB project officers and other stakeholders.

ABOUT THE SPEAKERS



Aditi Mukherji

Dr. Aditi Mukherji is IWMI's research group leader for climate change, adaptation, and resilience in New Delhi, India. She led the Water and Air Theme at the International Centre for Integrated Mountain Development (ICIMOD) in Nepal. She is the coordinating lead author of the water chapter of the 6th Assessment Report team of the IPCC.

She is also an associate editor of the *Climate and Development Journal*, and an editorial board member of the *Water Security Journal*. She has over 18 years of experience working on policies and institutions of water resources management with a special focus on the water-energy-food nexus.



Giriraj Amarnath

Dr. Giriraj Amarnath is IWMI's research group leader for water risks and disaster in Colombo, Sri Lanka. He is a remote sensing researcher specializing in the application of remote sensing and geographic information systems (GIS) in the study of risk assessment across a wide range of natural hazards and monitoring land and water resources in Asia

and Africa. He has over 13 years of experience in research including three years at the University of Bayreuth, Germany. His expertise includes monitoring floods and droughts, rapid emergency response mapping, GIS and remote sensing, hydrological modeling, flood forecasting and inundation modeling, weather-index insurance, climate change, and disaster risk management.



Rachel McDonnell

Dr. Rachel McDonnell is IWMI's strategic program director for water, climate change, and resilience in Rome, Italy. She has more than 25 years of experience in adaptation to climate extremes and water and food insecurity under a changing climate, centered on data technology and policy and management developments. She developed and mentored a global team of scientists to bring innovative solutions to critical climate

and water challenges.

Before joining IWMI, Dr. McDonnell was the head of climate change modeling and adaptation at the International Center for Biosaline Agriculture in Dubai, as well as a principal researcher for water governance and policy. She took various roles at the University of Oxford Water Group, including course director for MSc Water Science, Policy, and Management.



Richard Betts

Richard Betts is the head of climate impacts research at the Met Office Hadley Centre and University of Exeter. He has worked in climate modelling since 1992, specializing in modelling of terrestrial ecosystems, including interactions between ecology, hydrology, agriculture and land use, and interactions between land surface and atmosphere.

He has been a lead author on three IPCC Assessment Reports, including the ongoing 6th Assessment Report Cycle. He coordinated a major EU Framework 7 project called HELIX (High-End cLimate Impacts and eXtremes) and is technical lead for the 3rd National Climate Change Risk Assessment in the United Kingdom. He was appointed as an MBE in the 2019 Birthday Honors list for Services to Understanding Climate Change, and in 2020 he was awarded the Royal Meteorological Society's Climate Science Communications Award.

WEF Nexus, Water Productivity, and Water Accounting

16 February 2021, 3:30–5:00 p.m. (GMT +8), Tuesday



The WEF nexus and water accounting approaches are considered as two powerful tools that can maximize production derived from water use across sectors. This webinar will show the practical promise of implementing the nexus while also explaining how nexus benefits can be (i) better understood through water accounting, and (ii) realized through integrated basin approaches based on multi-stakeholder platforms.

The first presentation will outline how improving water use efficiency can reduce energy use in the irrigated agriculture sector of Uzbekistan. The second presentation will outline how water accounting approaches could enhance multisectoral benefits. A final presentation will provide an example of integrated water resources management (IWRM) -oriented processes utilized to engage stakeholders in allocation and management decisions. The webinar will conclude with a discussion on opportunities to package WEF interventions with water accounting and IWRM processes that can lead to water productivity and increase sustainability.

ABOUT THE SPEAKERS



Djumaboev Kakhramon

Dr. Djumaboev Kakhramon is a researcher on water management for IWMI in Uzbekistan. His expertise includes on-farm water management, agricultural extension, water productivity assessment, integrated water resources management, transboundary water management, institutional analysis, and water-energy-food-ecosystem nexus.

Before joining IWMI, he was with the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, SUVCHI – Water Professionals Association (Uzbekistan), International Centre for Agricultural Research in Dry Areas, Indian Institute of Technology Roorkee, Humboldt University (Berlin), and the Central Asia Group in Institutional Analysis of Social-Ecological Systems – WINS (Berlin).



Lisa-Maria Rebelo

Dr. Lisa-Maria Rebelo is a principal researcher at IWMI. Her research involves the development of new, innovative Earth Observation (EO) based methodologies to improve the understanding of interactions between basin scale hydrological and ecological functioning, and water availability and allocation, as well as identifying options for improved management of water resources at multiple scales.



Luna Bharati

Dr. Luna Bharati is IWMI's principal researcher for hydrology and water resources in Nepal. She has more than 14 years of post-PhD experience as a scientist and research program manager. The key areas of her interests and expertise are in integrated and sustainable water resources management. She has also worked extensively in assessing climate change risks and impacts as well as planning adaptation strategies from

large river basins to small mountain watersheds.

Additionally, Dr. Bharati has expertise on hydrological modeling, hydrological processes, assessment of environmental flows, climate change and adaptation strategies, biology (ecology), and economics. Prior to joining IWMI, she worked for the Center for Development Research (ZEF) on the Global Change and the Hydrological Cycle (GLOWA) project in the Volta Basin in Africa.



Jonathan Lautze

Dr. Jonathan Lautze is a research group leader and senior researcher in IWMI's office in South Africa. He has led and contributed to a range of applied interdisciplinary research and development projects focused on water governance, water security, transboundary water management, climate change and water, and water and health. Dr. Lautze has published

more than 50 peer-reviewed articles and edited a best-selling book on key concepts in water resources management. His research has been featured on global media outlets such as the BBC, Radio France International, and Voice of America.

Sustainable Asset Management System for Irrigation

2 March 2021, 3:30–5:00 p.m. (GMT +8), Tuesday



Enhancing irrigation service delivery requires improved management of assets in irrigation systems, since this underpins the performance of formal irrigation schemes. Against this need, IWMI has developed a software package, SAMS4i, that allows individual scheme managers and irrigation departments to input and track the status of their key assets as well as assess spatial variability within individual scheme performance. It also allows irrigation departments and development banks to view and compare assets across multiple schemes or even across countries.

Currently, the software has been setup using detailed data for selected schemes in Sri Lanka supplemented with additional information for countries across Asia and Ethiopia. This has been done as a ‘mock-up’ to assess the utility across these differing geographical and management interest scales. Included within the software is a report writing functionality that provides an audit of the assets and selected comparative data and information within and across irrigation schemes.

This webinar will (i) show the functionality of the SAMS4i as an introduction to a discussion between IWMI and ADB colleagues on improving the software capability and presentation of results to maximize its utility for different irrigation interests and users, and (ii) highlight linkages to other research and development between IWMI and ADB.

ABOUT THE SPEAKERS



Simon Langan

Dr. Simon Langan is the director for digital innovation and IWMI's country manager in Sri Lanka. He is an agricultural water management specialist with catchment/watershed management from field and modeling perspectives. Before joining IWMI, he was the director of the water program (water futures and solutions) at the International Institute for Applied Systems Analysis in Austria and the principal researcher and head of East Africa and Nile Basin office of IWMI in Ethiopia.



Lisa-Maria Rebelo

Dr. Lisa-Maria Rebelo is a principal researcher at IWMI. Her research involves the development of new, innovative Earth Observation (EO) based methodologies to improve the understanding of interactions between basin scale hydrological and ecological functioning, and water availability and allocation, as well as identifying options for improved management of water resources at multiple scales.



Petra Schmitter

Dr. Petra Schmitter is the research group leader for sustainable and resilient food production systems at IWMI in Myanmar. Her expertise includes catchment hydrology, urban hydrology and water sensitive urban design, irrigated and rain-fed agricultural systems, land use change, water management and productivity, water quality, tracers, and biogeochemical fluxes. Before joining IWMI, she previously worked with Singapore-Delft Water Alliance, National University of Singapore, Africa Rice Center in Benin, and the University of Hohenheim in Germany.



Lal Mutuwatte

Dr. Lal Mutuwatte is IWMI's senior regional researcher for hydrological modeling/remote sensing in Sri Lanka.

Circular Economy for Water Security

16 March 2021, 3:30–5:00 p.m. (GMT +8), Tuesday



Dwindling water availability, growing environmental concerns, complex health issues, and rethinking current economic growth models are all intrinsic to developing and implementing the circular economy in Asia. At its core, the circular economy is about achieving a set of social, economic, and environmental outcomes that underpin efforts toward more sustainable development models, while also ensuring social inclusion and equity.

Central to the circular economy approach is the principle that resources are used for as long as possible, recovering and regenerating products and materials at the end of each service life, therefore closing cycles. The circular economy derives value (e.g., water, energy, nutrients, organic matter) from waste streams by applying a business perspective and shifting the focus away from simple coverage. Although it is implemented at the local level, it usually requires strong policy support and the active involvement of multiple stakeholders, connected to each other through partnerships and cooperation arrangements across sectors and groups.

The experience of implementing circular economy models in different parts of the world shows that major challenges include access to land or achieving financial sustainability of the circular economy business model. IWMI's global experience along with case studies in Ghana, India, and Sri Lanka demonstrate that successes can be achieved when there is an adequate investment climate and there are sustainable value chains to commercialize the waste-based products.

ABOUT THE SPEAKERS



Solomie Gebrezgabher

Dr. Solomie Gebrezgabher is a researcher on economics, circular economy, and water pollution at IWMI. She specializes in research on economic and environmental sustainability assessment and business model development in circular economy with a focus on economics of water, energy, and nutrient recovery. Currently, her research centers on developing business models for circular economy technological solutions, assessing the economic, social, and environmental sustainability of investing in different business models as well as assessing the investment climate for private sector investment in circular economy businesses in developing countries.



Josiane Nikiema

Dr. Josiane Nikiema is IWMI's research group leader for water pollution and circular economy in Ghana. She is engaged in several research activities on optimization of processes for recovery of nutrients and organic matter from both fecal sludge and organic solid wastes. She also tests at scale sustainable nutrient recovery business models in Ghana, India, and Sri Lanka.

Recently, she contributed to the development Fortifer®, a registered trademark of fertilizer pellets produced from fecal sludge, currently commercialized in Ghana. Dr. Josiane is also active in integrated urban water management and works on solutions for enhanced agricultural water security, such as through the safe reuse of domestic (treated) wastewater for irrigation and aquaculture.



Chamindry Saparamadu

Chamindry Saparamadu is the director general and chief executive officer of the Sustainable Development Council of Sri Lanka. She provides overall leadership to the institution to execute its functions relating to the facilitation and coordination of the SDG implementation process in Sri Lanka. Chamindry has a multidisciplinary educational background in economics, law, and development studies and has worked with several international development organizations including the United Nations for over 15 years in the areas of democratic governance, parliamentary reforms, anti-corruption, human rights, and gender.



Oriana Romano

Dr. Oriana Romano is the head of unit for the water governance and circular economy, urban policies, and sustainable development division of the OECD Centre for Entrepreneurship, SMEs, Regions and Cities. In 2018, she initiated a Program on the Economics and Governance of Circular Economy in Cities, which supports cities and regions in developing and implementing circular economy strategies. She also leads the OECD Water Governance program. Before joining OECD in 2013, she was a research assistant and university lecturer in Environmental Economics at the Centre for International Business and Sustainability at the London Metropolitan University and the Department of Social Science of the University L’Orientale in Naples, Italy. She holds a Ph.D. in Institution, Economics, and Law of Public Services.



Alan Nicol

Dr. Alan Nicol is IWMI’s strategic program director for water, growth, and inclusion and the country representative in Ethiopia. His area of expertise is research on water and development in Asia and Africa with a particular focus on political economy, rural water development, and transboundary river basin management. Previously, Dr. Alan was the head of the water policy program at ODI and the director for GWI East Africa at CARE, and a research fellow at the Institute of Development Studies.