

EVENT SNAPSHOT

Part 2 – Improved Decision-Making for Water Security Using Water Accounting

Event Details

Date and Time

19 November, 4:00–5:00 p.m. (Manila time)

Venue

MS Teams

Related water subthemes

	Water supply, sanitation, and wastewater		Flood/drought risk management and disaster resilience
x	Irrigation and productivity		Water governance and finance
x	IWRM, storage, water-food-energy nexus		Water and health

Planning of water resources development and allocation requires temporal and spatial information on water availability and consumption at the natural scale. Following the first webinar on water productivity, the ADB Water Sector Group, IHE Delft Institute for Water Education (IHE Delft), and the International Water Management Institute (IWMI) held a webinar on use of remote sensing for water accounting. This provides quantitative information and maps on major storages, flows, and fluxes of water resources within a river basin. This information is critical to ensure all major water demands can be sustainably met, including for environmental, domestic, agricultural and energy purposes.

The webinar introduced the concept of water accounting and the Water Accounting Plus (WA+) methodology, and provided examples on how water accounting can be used in decision-making, noting different ADB case studies part of the two phases of water accounting work done since 2017. Lastly, a vision for the future of remote sensing-based water accounting was presented.

This work was made possible through the Water Financing Partnership Facility under the technical assistance Knowledge and Innovation Support for ADB’s Water Financing Program (TA 6498). The session gathered a total of 152 participants, and was moderated by IHE Delft’s Lauren Zielinski and ADB Water’s Jelle Beekma.

Key Takeaways

Remote sensing technologies in combination with water accounting can prove to be essential information for decision-makers. Water accounting is the “systematic quantitative assessment of the status and trends” of water resources (FAO, 2018). The process consists of three main steps: (i) data acquisition to identify gaps and quantify uncertainties, (ii) data analysis to convert data into information, and (iii) communication to

make the information accessible to stakeholders. Water Accounting Plus (WA+) is a recent framework that uses open access remote sensing data in combination with water balance models to provide an independent assessment of water resources conditions.

Water accounting can be integrated with the various steps in the integrated water resources management (IWRM) planning cycle, including estimating available water, consumption patterns, and key indicators for river basin assessments; analyzing the of impact and/or availability of water resources for infrastructure development or new water policies; and providing spatial and temporal monitoring and evaluation of implemented actions.

Water accounting has the potential to improve water management in basins with some challenges for implementation. There is great potential for remote sensing-based water accounting in various basins with a high density of irrigation systems, including improving surface and groundwater management at the farm, basin, and regional scale. However, there are challenges to implementing water accounting locally, such as the need to build more capacity within local and state governments as well as improved communication products for policy makers and field engineers.

Related ADB Projects

[India: Karnataka Integrated and Sustainable Water Resources Management Investment Program - Tranche 2](#)

Project Officer: Marie L'Hostis

[Cambodia: Irrigated Agriculture Improvement Project](#)

Project Officer: Alvin Lopez

[Mongolia: Vegetable Production and Irrigated Agriculture Project](#)

Project Officer: Enerelt Enhkbold

[Philippines: Mindanao Irrigation Development Project](#)

Project Officer: Junko Sagara

**“Using this water accounting tool has really supported us
in a lot of programs.”**

— Dr. P.S. Rao

About the Speakers



Elga Salvadore

Dr. Elga Salvadore is a lecturer in water accounting at IHE Delft in the Netherlands. She teaches water accounting and remote sensing-related subjects and is involved in various capacity development and research projects in Cambodia, Egypt, India, Jordan, and Palestine). In 2017, she was appointed as guest professor at the Vrije Universiteit Brussels and KU-Leuven (Belgium) where she teaches Environmental Programming in Python for students of the Interuniversity Master in Environmental Engineering (IUPWARE).



Marloes Mul

Dr. Marloes Mul is an associate professor in water resources management at IHE Delft, where she currently manages the Water Accounting and Water Productivity team. Before IHE Delft, Marloes was based in the West Africa Office of IWMI in Accra, Ghana, where she worked on research projects dealing with dam operation and natural and built infrastructure in the West Africa region, particularly in the Volta Basin. She was a visiting lecturer at the University of Zimbabwe between 2004 and 2007.



P.S. Rao

Dr. P.S. Rao is the director of the Advanced Center for Integrated Water Resources Management and currently works for the Government of Karnataka. He has 28 years of working experience in the water sector, which includes working with ADB, the governments of India and the Netherlands, UN Food and Agriculture Organization (FAO), universities, and other NGOs and donor agencies focused on water and agriculture. He holds a PhD from Osmania University in India.



Naga Manohar Velpuri

Dr. Naga Manohar Velpuri is a senior researcher at IWMI. His research interests are mostly focused on the overlapping areas of water resources, surface hydrology, remote sensing, and geospatial analysis. His current research projects cover analyzing spatiotemporal water resources data and basin water accounting studies using multi-source satellite data.

Related Resources

Open courses at IHE Delft: “Water Productivity and Water Accounting using WaPOR”

<https://ocw.un-ihe.org>

Interactive data and result portal (under development by FAO)

<https://data.apps.fao.org/aquamaps/>

<http://waterinag.org/application/ADB-WP>

SEEA-Water: System of Environmental-Economic Accounting for Water

https://unstats.un.org/unsd/publication/seriesf/Seriesf_100e.pdf

YouTube playlist of webinar and advanced WA+ lectures from IHE Delft

<https://www.youtube.com/playlist?list=PLYLoAVsT8gZP2GuuOZNRMOaaS8a4kbEDO>