EVENT SNAPSHOT

Part 3 – Sustainable Asset Management System for Irrigation

Event Details

Date and Time
2 March, 3:30–5:00 p.m. (Manila time)

Venue
Zoom

Related water subthemes

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

Enhancing irrigation service delivery requires improved management of assets in irrigation systems, since this underpins the performance of formal irrigation schemes. Against this need, the International Water Management Institute (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. The software also allows irrigation departments and development banks to view and compare assets across multiple schemes or even across countries.

Currently, SAMS4i 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 the 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 showcased the functionalities of SAMS4i, which also served as an introduction for discussing how to improve the software capability and presentation of results among IWMI and ADB specialists, to maximize the software's utility for different irrigation interests and users. The webinar also highlighted linkages to other research and development between IWMI and ADB.

IWMI's Simon Langan, director for digital innovation and IWMI's country manager in Sri Lanka, moderated the session along with Petra Schmitter from IWMI Myanmar. The presentations were kicked off by Lal Mutuwatte, IWMI's senior regional researcher for hydrological modeling/remote sensing in Sri Lanka, on "Targeting Investments in Medium to Large Scale Irrigation Schemes". This was followed by Lisa-Maria Rebelo, IMWI principal researcher, on "Remote Sensing based Diagnostics for Irrigation Scheme Performance" and last to present was Oyture Anarbekov, water resources management specialist, who

discussed the case of using disruptive technologies for water in Uzbekistan. A total of 156 participants joined the session.

Key Takeaways

Knowledge on irrigation assets and performance variation is a key element of improving management and investments in irrigation. The SAMS4i software, a free and open source platform, provides a framework for storing and spatially analyzing information based on assets in an irrigation scheme. It can generate performance reports for schemes at the regional and country levels. SAMS4i draws and builds on a number of previous and existing pieces of work which in the future will enhance the operation and functionality of the software and should feed into other larger ongoing coordination efforts relating to irrigation.

Improving irrigation management and reviewing within-scheme productivity and performance in a more sustainable way is the responsibility of multiple users working largely at three different scales: within scheme, between schemes in regions and countries, and between countries. The needs of these users are different but are underpinned by some of the same basic needs and requirements relating to asset management benchmarking and performance indicators. SAMS4i provides an approach, framework, and indicators which caters for these differing needs.

By integrating the outputs from the remote sensing analyses with ground level data, we are able to provide a powerful suite of decision support tools which collectively contribute to: (i) improved benchmarking; (ii) better asset management; (iii) targeting of investments and selection of priority assets/blocks/schemes; (iv) identification of areas of decreasing performance related to water availability, governance, and/or productivity; and (v) address issues before they become critical. In combination, these tools can be used to improve the planning, design, and management of irrigation systems.

> "The ultimate goal is to improve the transparency of water distribution, which should lead to better governance and increased financial sustainability of water service providers."
> — Oyture Anarbekov, Researcher and Country Manager,
> IWMI Regional Representative Office for Central Asia, Uzbekistan

From the Chat Box

Does the software have the spatial information of evapotranspiration (ET)? Or it is via open source database or should be collected through ground stations?

[From Lisa-Maria Rebelo] The calculation of ET is not available through the software; but there are options to link to online databases (e.g., WaPOR, although at the moment only for Africa and MENA region, but expanding to Asia over the next five years) or to integrate project-based assessments. If ground station data are available, these can be ingested into the system.

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 IMWI, 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.

Oyture Anarbekov

Oyture Anarbekov is the researcher and country manager at the IWMI Regional Representative Office for Central Asia based in Tashkent, Uzbekistan. He has more than 15 years of experience in water resources governance, management, irrigation, and drainage as well as rural development and poverty reduction issues. He has operational experience to support preparation investment, innovative technologies, and institutional projects in agricultural water management. He is familiar with policy options about water management and irrigation, irrigation planning in support of agricultural transformation and within the basin context of Central Asian countries.

Related Resources

Systematic Asset Management Software (SAMS4i)
http://samsv2.iwmi.org/user_management/login.php

How tech and modern market mechanisms can solve water scarcity in post-Soviet states
https://smartwatermagazine.com/blogs/oyture-anarbekov/how-tech-and-modern-market-mechanisms-can-solve-water-scarcity-post-soviet

Performance of large-scale irrigation projects in sub-Saharan Africa
https://www.nature.com/articles/s41893-020-00670-7