

Water and Development Congress & Exhibition

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TURNING THE TIDE ON WATER RESOURCES

Managing floods and droughts across scales

How can informed planning improve the management of floods and droughts across scales (from basin to utility scale)?

Chair: Katharine Cross, IWA

Workshop Agenda

Time	Item	Who
14:10-14:20	Setting the scene	Raül Glotzbach, IWA
14:20-14:30	How information can be used for flood and drought management and planning – link between basin planning and utilities	Dr. Royol Chitradon (HAIL)
14:30-14:40	Q&A	Moderator: Katharine Cross, IWA
14:40-15:05	Managing floods and droughts from basins to utilities	David Ogaram, National Water and Sewerage Company, Uganda Eng. David Onyango, Kisumu Water and Sewerage Company Limited, Kenya Stefan Qvist, Xylem Inc., Sweden Ronaldo Padua, Maynilad, Philippines Eng. Ali Subah, ASG for Technical Affairs at Ministry of Water & Irrigation, Jordan
15:05-15:25	Facilitated discussion	Moderator: Katharine Cross, IWA
15:25-15:30	Closing remarks	Raül Glotzbach, IWA

About the speakers

Royol Chitradon (Dr.) (Hydro and Agro Informatics Institute) is currently the Director of Hydro and Agro Informatics Institute (HAI) under the Ministry of Science and Technology, Thailand. With his background in mathematics, informatics and his involvement in water issues, he has developed many projects in collaboration with the private sector and government agencies to enhance water resource management in Thailand. He has also taken part in different roles related to informatics for water resource management and disaster prevention from the community level to the International level

About the Panel

Ali Subah (Eng.) (ASG for Technical Affiars at Ministry of Water & irrigation) – Secretary General Assistant for Strategic Planning in the Ministry of Water and Irrigation. His primary research areas of interest include policies, national strategies and national water master plan. He is the author of several publications: Groundwater Abstraction in Northern Jordan, Monitoring of Groundwater Levels in Jordan, Structural Features of the Main Hydrogeological Units in Northern Jordan, Comprehensive three-dimensional Groundwater Model of Jordan, Mapping of Groundwater Vulnerability and Hazards to Groundwater in the Irbid Area and Delineation of a Groundwater Protection Area for Several Springs and Well fields.

David Ogaram (National Water and Sewerage Company) – Regional Head of Water Quality for Eastern Uganda. David has a degree in Environmental Science and over 15 years of experience in water quality management and WSP development and implementation.

David Onyango (Eng.) (Kisumu Water and Sewerage Company Limited) – Graduated with BSc (Engineering), Nairobi University (1988), MSc (Construction Engineering and Management) Loughborough University (1993), UK and MBA from Maaschicht School of Management (2009). Eng. David has extensive public and private sector experience in planning development and operations of water infrastructure alongside management of utilities. Currently he is the Managing Director of Kisumu Water and Sewerage Company; a public utility company, a position held since 2006.

Ronaldo Padua (Maynilad) – Has over 15 years of professional experience and technical expertise in the Water Industry with a proven ability to improve the efficiency of a water supply system from source to distribution. Ronaldo manages complex operational challenges and has been developing strategies for medium and long term programs in a water supply operation. He handles various challenges in regulatory compliance with regards to service level agreement, water quality and technical master plan.

Overview

Floods and droughts are becoming more unpredictable, frequent and severe. There is a growing sense of urgency around the need to improve resilience within river basins, and for this to become a critical part of water management plans across scales to manage the impacts. Decisions made at the regional (basin) and the local level need to be linked to plans at a larger scale and build on a foundation of better informed planning. The workshop will explore how planning approaches and data management tools can improve the management of and planning for extreme events across scales from catchment to utilities.

An overview of the Basins of the Future programme in relation to flood and drought management was provided by Raul Glotzbach (IWA). Dr. Royol Chitradon (Hydro-Agro Informatics Institute, Thailand) presented on how information can be used for flood and drought management and planning including linking between basin planning and utilities. This was followed by a moderated panel discussion with David Ogaram (NWSC), David Onyango (KIWASCO), Stefan Qvist (Xylem), Ronaldo Padua (Maynilad) and Ali Subah (MWI).

Use of information and the link between basin planning and utilities

Access to information is a barrier. There is a need to collect and analyse data and manage the multiple needs of users. This requires an improvement in the cooperation between organisations/stakeholders.

Information can help support flood prevention and response can be used effectively and is more cost effective than infrastructure development. Analysed data can support policy decisions and investment in the future. Thailand has 30 agencies related to water issues and have a data integration centre for water which can integrate information from 13 of these agencies.

Information can support planning in river basins and can be set up to provide two way communication between users and providers.

The Chao Phraya contributes 70% of the GDP in Thailand and has the best weather prediction system. As open source information is being more and more used this data management and analysis is becoming increasingly cost effective.

What is needed:

- Monitoring of decentralised development especially infrastructure which can affect the hydrology.
- Retention areas for capturing floods.
- Build a team to manage facts and interpret the analysis.

Discussion

Eng. David Onyango, Kisumu Water and Sewerage Company Limited, Kenya

The area where Kisumu Water and Sewerage Company Limited (KIWASCO), Kenya operates is prone to floods and this impacts the quality of water they abstract. There is variability in the quality of infrastructure which means floods can have devastating impacts. Floods also affect the carrying capacity of the sewer network and operation for water treatment and cost are impacted while power outages also impact the capacity to ensure a continuous supply of water. As such, and for most utilities, flood and drought events make it difficult to operate,

KIWASCO has a business continuity plan to deal with flooding impacts; they are also implementing WSP identifying control measure for hazards. They are also piloting a DSS to predict extreme weather.

There is a need to have the right policies in place at the national level (and at the utility level that fit within the framework set at the national level). Stakeholder engagement is key as well as financial stream for investment in areas that require improvement.

David Ogaram, National Water and Sewerage Company, Uganda

The National Water and Sewerage Company, Uganda is in 120 urban centres. They have telemetric station and an information system which uses satellite information. There are many institutions including the Ministry of Water and Environment that gather data, which can be used for disaster response and coordination.

Ronaldo Padua, Maynilad, Philippines

There has recently been a typhoon in the Philippines which has had impacts on water supply systems. The utility is in constant communication with various stakeholders across the catchment to manage the situation. However, there needs to be a more strategic approach for forecasting, analysis and planning, which considers finance, business continuity, WSP, etc. The key is to prepare for the worst when devising a plan.

Stefan Qvist, Xylem Inc., Sweden

There are several technologies that can support water service providers, municipalities, etc. in improving their ability to cope with floods and droughts. Xylem Inc. has worked with numerous municipalities to prepare pumping systems for flooding events. The use of submersible pumps can be

cost efficient in responding to floods. Based on long-term rain predictions, pump with specifications can be prepared for floods.

Xylem Inc. is developing a pump that can detect debris in the system and clean itself. Furthermore, they suggest that pump station design is very important. These should consider potential flood and drought impacts.

Dr. Royol Chitradon, Hydro and Agro Informatics Institute, Thailand

We should try and develop information that shows the facts and potential impacts before jumping to infrastructure development projects to deal with floods, much like with pump station design. Activities or infrastructure that is implemented or constructed without good information is likely to fail. In such a way we can work toward ensuring that our flood prevention systems will operate when we need them the most.