

FLOOD & DROUGHT MANAGEMENT TOOLS

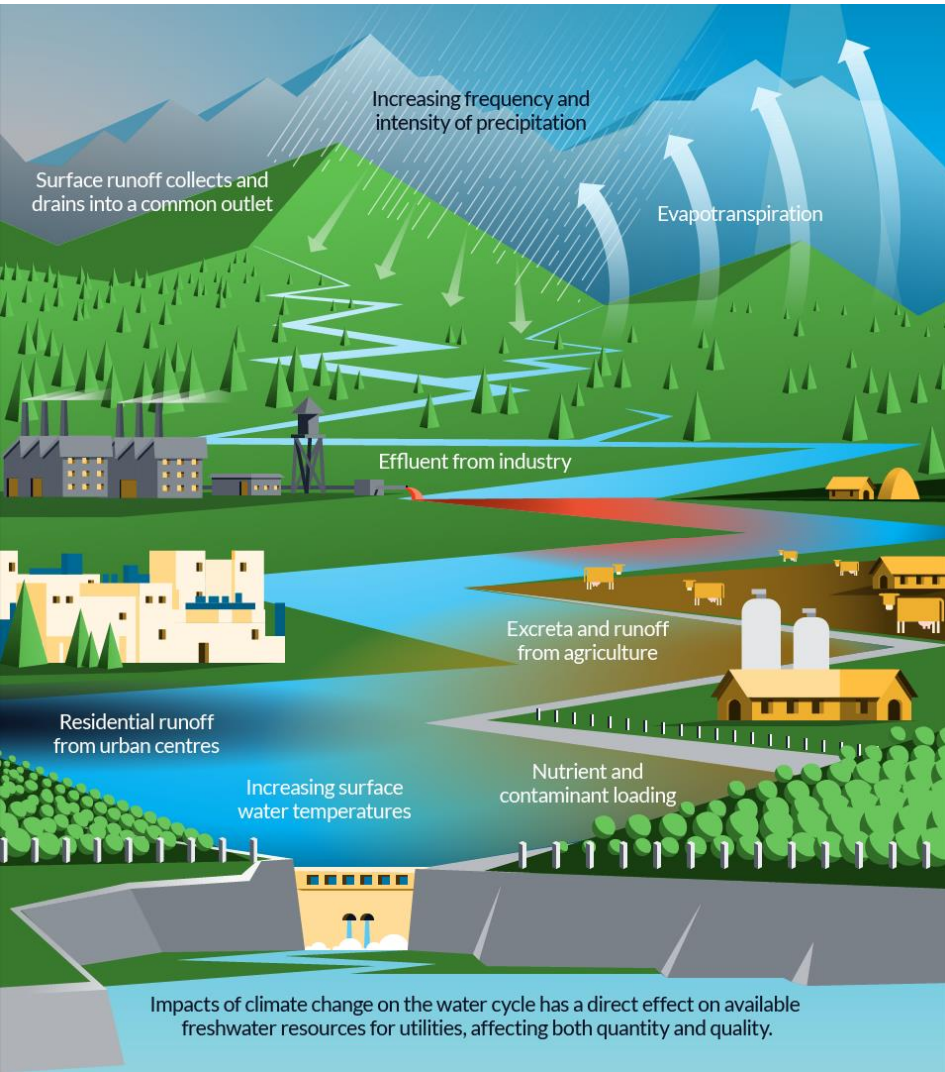


Contacts:
Oluf Zeilund Jessen, DHI
ozj@dhigroup.com

Katharine Cross, International Water Association
(IWA)
Katharine.cross@iwahq.org

*Perspective, experience
and next steps*





Key challenges

- Increased extreme floods and droughts (exacerbated by climate change)
- Impacts water resources and consequently drinking water supply
- Poses risk to public health, economy and the environment
- Climate change an issue but not a priority to address as not able to control
- Fragmented engagement with catchment area



Damage to infrastructure

High levels of rainfall and runoff can increase loading of pathogens, chemicals, and suspended sediment in surface waters



Floods impact the quality of surface water and ground water in multiple ways:



Contaminated water entering groundwater through wells



Overflow and contamination from sewerage systems





Low flows and reduced water levels can increase the concentration of pollutants and nutrients.

Higher temperatures can create conditions for increased waterborne pathogens in the supply system.

Reduced groundwater tables and surface water flows, leading to reduced supply and potentially the use of unsafe water sources.



Drought conditions can lead to water scarcity and reduced supply.



Higher temperatures can increase cyanobacterial blooms, increasing risks of cyanotoxins and natural organic matter in water sources.

Lower water availability for washing, cooking and hygiene, increasing exposure to waterborne contamination.



A changing climate affects the timing, predictability and intensity of precipitation.

Climate change will impact our operations and put our populations, especially the most vulnerable, at increased risk.

Adjustments must be made to our policies, programmes and infrastructure to prepare for and cope with changing freshwater quantity and quality.



Land, water and urban area managers can better prepare for water related risks by integrating information on flood and drought events into planning and analysis processes to ensure drinking water is safe.

Smart Water Management for Water Utilities - Challenges

- The water and wastewater utility sectors are traditionally slow to adopt new methods and technologies due to:
 - a lack of incentives,
 - risks from adoption (whether real or perceived) and;
 - siloes of data owners and/departments
- “Using and interpreting data is not only a search for insights; it’s also about enlisting the hearts and minds of the people who must act on those insights.” Harvard Business Review, 2017 - <https://hbr.org/2017/03/how-the-water-industry-learned-to-embrace-data>

Climate smart water management

- Cheaper and more accessible data **provide valuable information in places that used to be difficult to access**
- Insights into upstream & downstream in the watershed, via tools like **satellite imagery**
- **Interpretation of data** (e.g. climate information) is essential, as the amounts of data from different sources can be overwhelming
 - Methodology for water utilities to integrate climate data into hazard and risk assessment

Climate Resilient Water Safety Planning
 November 28, 2018
 10:00 hrs Amsterdam local time

IWA the international water association **WEBINAR** World Health Organization

Interpreting climate information for water utilities
 October 25, 2018
 10:00 hrs Amsterdam local time

IWA the international water association **WEBINAR** EMANTI

Water Safety Planning: Entry point

Addressing these climate hazards and impacts demands effective planning. Water Safety Planning offers water utilities with such an approach.

Water Safety Planning is a comprehensive risk assessment and management approach across each step in the water supply system from catchment to tap.

Water Safety Plans are recognised by the WHO and IWA as the most effective means of ensuring the safety and acceptability of drinking water supply.

Addressing climate hazards using a Water Safety Plan enables your utility to increase its flexibility and resilience, increasing responsiveness to hazardous events such as floods and drought before they threaten the water supply system.

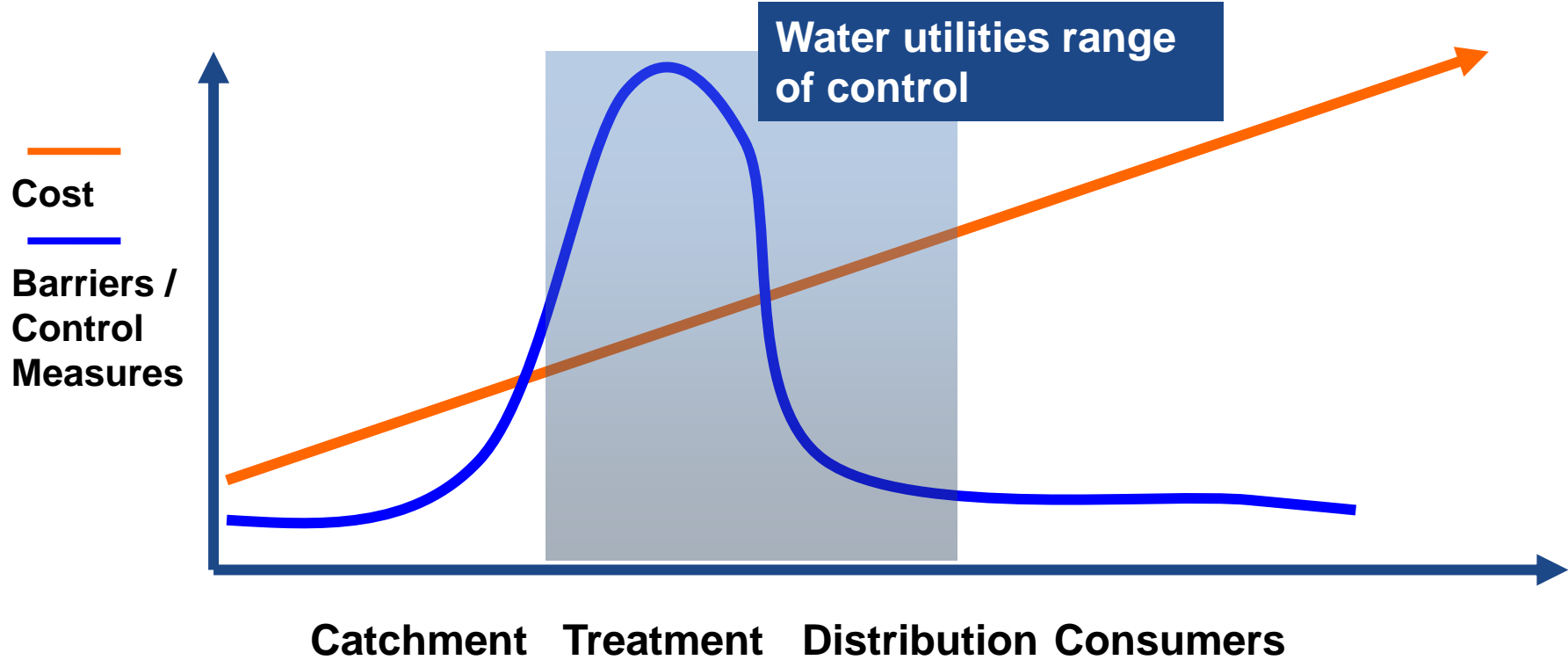
Climate change

- Medium and long-term planning safe drinking-water includes external uncertainties due to changes in the climate and environment.
- WSP offers a systematic framework to manage risks by considering the impact of climate variability and change.

Using climate data

- Integrate climatic hazards (flooding, droughts) using increasingly accessible climate data
- WSP as a mechanism for systematically managing data

Water utilities control



Climate smart water management

- Support from decision makers (to use tools or methodologies)
- Long term investment
- Cross –sector approach
- Integration of satellite data with in-situ data
- Involvement and buy-in from users from inception

Climate smart water management

- Water utilities which are better prepared for climate hazards, will be better placed to ensure a safe and secure water supply
 - Improve health;
 - Improve economic productivity;
 - Improve livelihoods.



www.floaddroughtmonitor.com

For more information, contact

DHI, Oluf Zeilund Jessen
ozj@dhigroup.com

IWA, Katharine Cross
katharine.cross@iwahq.org

Or learn more at

fdmt.iwlearn.org

