

# Empowering Hydrology and Water Resources Services through Digital Transformation for a Sustainable Future

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METEOROLOGICAL  
ORGANIZATION

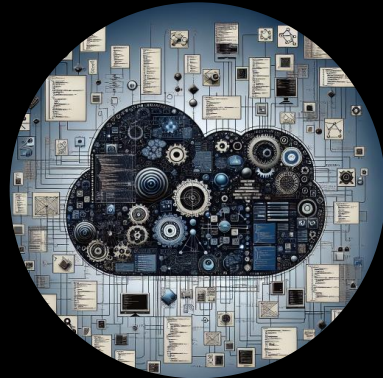


# Challenges



## Data Security and Privacy

With increased digitalization comes the need for robust data security measures to protect sensitive information and ensure privacy.



## Integration and Interoperability

Ensuring seamless integration of various digital systems and technologies is crucial.



## Change Management

Overcoming resistance to change and ensuring that staff are equipped with the necessary skills to leverage the technological solutions.



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# What is Digital Transformation?

**Digital transformation\*** - A process during which, by advanced applications of ICTs in sectors' business activities such as R&D, production, services, etc., the sectors' business activities are optimized, reconstructed and integrated, and sectors' development modes are disruptively reformed and innovated. (Recommendation ITU-T Y.4906 (07/2019))



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**Enhanced Data Management**  
Digital transformation enables water resources managers to collect, analyze, quality control, and utilize data from various sources to make informed decisions and optimize resource allocation.



**Operational Efficiency**  
It streamlines processes, reduces manual intervention, and enhances the overall efficiency of water resource management and water allocation.



**Sustainability and Resilience**  
By leveraging digital technologies, stakeholders can improve sustainability, transparency, reduce wastage, and build resilience against environmental and societal challenges.

# Value Chain from Data to Decision-Making

## WMO Hydro related Initiatives



REAL TIME MONITORING,  
DATA COLLECTION, STORAGE  
& SHARING



MODELLING &  
FORECASTING



PRODUCT  
DEVELOPMENT



INFORMATION  
DISSEMINATION



SERVICES &  
DECISION SUPPORT



USER-FEEDBACK

CAPACITY DEVELOPMENT

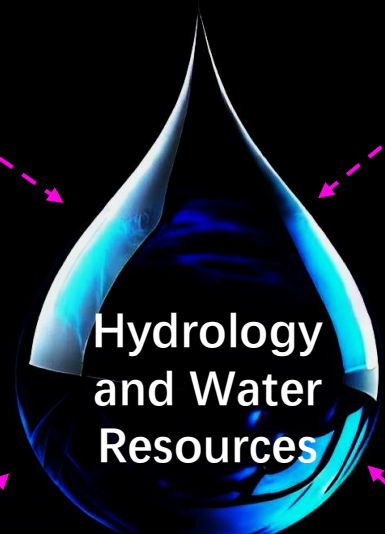
Standard setting, quality management and guideline as support to National Meteorological & Hydrological Services



Artificial  
Intelligence and  
Machine  
Learning



Immersive  
technologies



Hydrology  
and Water  
Resources



Remotely  
sensed data  
and  
modelling



Internet of  
Things



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THANK YOU



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