



ICDSME2025
PRE-WORKSHOP

DAMS RESILIENCE UNDER CLIMATE CHANGE AND SEDIMENTATION CHALLENGES

4 November 2025

8.00 am - 5.30 pm

Will be held on

Pullman Hotel, Sarawak



Workshop Fee

Malaysian Delegate:

- MyCOLD Member: RM 850
- Non MyCOLD Member: RM 950

International Delegate: RM 1,200

Workshop Description

Learn how to strengthen dam resilience in the face of climate change and sedimentation issues. This workshop covers:

- ✓ Understanding climate change impacts on dams
- ✓ Managing & reducing sedimentation risks in rivers & reservoirs
- ✓ Using tools and methods for monitoring and modelling
- ✓ Applying adaptation and mitigation strategies
- ✓ Learning from real case studies

Gain the skills to anticipate challenges, protect reservoir capacity, and ensure long-term dam safety and performance.

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SPEAKER'S BIOGRAPHY



Dr. Zulfaqar Sa'adi
Postdoctoral Researcher,
Centre for Environmental Sustainability
and Water Security (IPASA), UTM

Dr. Zulfaqar Sa'adi is a postdoctoral researcher in hydro-climatology and climate change at the Centre for Environmental Sustainability and Water Security (IPASA), Universiti Teknologi Malaysia (UTM). His work focuses on advancing climate change research through interdisciplinary and collaborative approaches, engaging with both academic and non-academic stakeholders. He has published over 70 climate change-related papers in international journals, with more than 78 additional works under review. Dr. Sa'adi has received several prestigious accolades, including recognition as a Commonwealth Future Climate Research Cohort member (2023–24) and JSPS HOPE Fellow (2023). His earlier achievements include being named an Outstanding ASEAN Science Diplomat and receiving a Gold Medal and Best Thesis Award in Water Resources & Hydrology (PhD category) in 2019. Beyond academia, he has contributed to national and regional projects such as flood risk vulnerability assessments, disaster risk management planning, and dam catchment management. He has also played active roles in community and educational initiatives, delivering training, workshops, and citizen science programs that exemplify his commitment to bridging science with practice in addressing climate challenges through sustainable adaptation co-creation approach.



Ir. Gs. Mazura Nor binti Zulkifli
Associate Director,
Dr. Nik & Associates Sdn. Bhd.
(DNA Sdn. Bhd.)

Ir. Gs. Mazura Nor Binti Zulkifli is a Associate Director of Dr. Nik & Associates Sdn Bhd., a distinguished consulting engineering firm. She was honored with a World Bank scholarship and earned her MSc in Hydraulics Engineering and River Basin Development from UNESCO-IHE, Institute for Water Education, Delft, The Netherlands, in 2008. With over 25 years of experience, she is a technical expert in hydraulics, water resources, flood management, disaster risk reduction, and geospatial information management. Her career spans roles in local, national, and international government and private projects. Among her notable achievements is involvement in a project funded by the Asian Development Bank (ADB) in collaboration with the Danish Hydraulic Institution, Denmark, and SMEC, Australia. This project, Sungai Klang Flood Mitigation, and Environmental Improvement, encompassed the design and implementation of the iconic SMART Tunnel. She also a project principal in developing the Geospatial Strategic Plan for the Kingdom of Saudi Arabia She has also led other impactful national-scale initiatives, including the National Water Balance Management System (NAWABS), Malaysia's Geospatial Master Plan, and the Updating of Condition of Flooding and Flood Damage Assessment in Malaysia. Her contributions have been instrumental in advancing the fields of water management and geospatial strategy in Malaysia and beyond. A passionate educator, Ir. Mazura has been serving as an adjunct lecturer at Universiti Teknologi PETRONAS for over a decade. Her extensive professional network – ranging from being a committee member of Malaysia Water Partnership to a board member for the United Nations Committee of Experts on Global Geospatial Information Management (UNGIM) – Private Sector Network.



AGENDA

8:00 am

Registration & Breakfast

9:00 am

Session 1: Strengthening Dam Resilience under Climate Change: GCM Selection with the SPIN Framework

- Climate change impacts on dams: hydrological extremes, inflows, and resilience challenges
- Understanding CMIP6 climate models and uncertainties
- The SPIN framework: Performance, Independence, Number
- Step-by-step process for selecting climate models
- Practical applications in dam safety, operational planning, and resilience strategies
- Case studies and interactive discussion

12:30 pm

Break & Lunch

2:00 pm

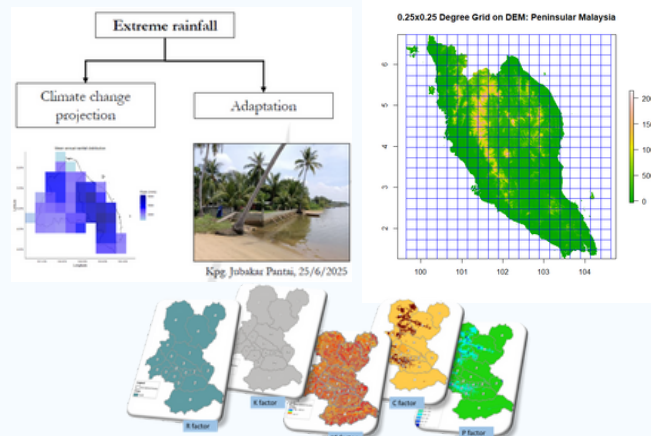
Session 2: River Dynamic and Sedimentation

- River morphology and geomorphologic conditions
- Natural and human influences on sediment movement and reservoir capacity
- Data collection and field methods for sedimentation studies
- Sediment transport modelling and evaluation tools
- Erosion and sedimentation assessment techniques
- Mitigation and management strategies for sustainable reservoir operations
- Case studies and interactive discussion

5:30 pm

End of Workshop

**Free flow coffee & refreshments provided*



WHO COULD BENEFIT FROM THIS COURSE?

- ✓ Government Agencies/Local Authorities
- ✓ C&S Consultant Engineers
- ✓ Design Engineers
- ✓ Site Supervisors
- ✓ Dam Owners
- ✓ Dam Operators
- ✓ Dam Safety Inspector



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