



ICDSME2025  
PRE-WORKSHOP

# DAMS RESILIENCE UNDER CLIMATE CHANGE AND SEDIMENTATION CHALLENGES

Will be held on

4 November 2025

8.00 am - 5.30 pm

Pullman Hotel, Sarawak



## 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.

## Workshop Fee

Malaysian Delegate:

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

International Delegate: RM 1,200

ORGANIZED BY



CO-ORGANIZERS



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MEDIA PARTNERS



Our Social Media:

Our Website: [www.icdsme2025@mycold.com.my](http://www.icdsme2025@mycold.com.my)

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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** is the Associate Director of Dr. Nik & Associates Sdn. Bhd., a leading consulting engineering firm. A recipient of the World Bank Scholarship, she obtained her MSc in Hydraulics Engineering and River Basin Development from UNESCO-IHE, 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 portfolio includes high-impact national and international projects, notably the Sungai Klang Flood Mitigation and Environmental Improvement Project, which led to the creation of the iconic SMART Tunnel, in collaboration with DHI Denmark and SMEC Australia under Asian Development Bank funding. She also served as Project Principal for the Geospatial Strategic Plan for the Kingdom of Saudi Arabia, and has led several national initiatives such as NAWABS, Malaysia's Geospatial Master Plan, and the Flood Damage Assessment Update. A passionate educator, Ir. Gs. Mazura has served as an Adjunct Lecturer at Universiti Teknologi PETRONAS for over a decade. She is also actively involved in professional networks, including the Malaysia Water Partnership and the UNGGIM Private Sector Network, where she continues to champion innovation in water and geospatial strategy.

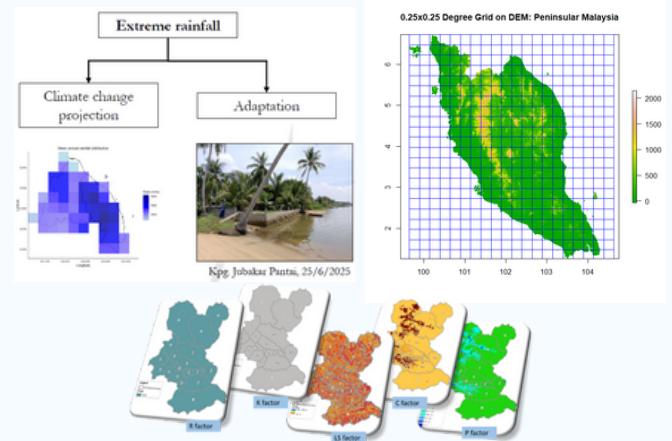


**Ir. Iwan Tan Sofian Tan**  
Associate Director (Sarawak)  
Head of Coastal & Hydraulic Department  
Dr. Nik & Associates Sdn. Bhd.  
(DNA Sdn. Bhd.)

**Ir. Iwan Tan Sofian Tan** is Associate Director at Dr. Nik & Associates Sdn. Bhd., a leading Malaysian consultancy in coastal, riverine, and environmental engineering. With over 30 years of experience and an MSc in Civil Engineering from Universiti Teknologi PETRONAS (2022), he specializes in reclamation, dredging, river mouths, ports, scour protection, and shoreline management. His portfolio spans Malaysia and international projects in Mauritius, Turkmenistan, and the UAE. A Professional Engineer with Practising Certificate, Corporate Member of IEM, and Registered EIA Consultant, Ir. Iwan is known for his strategic leadership and technical excellence. He plays a key role in advancing sustainable coastal infrastructure and integrated engineering solutions across diverse environments.

## 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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## EXCLUSIVE PERKS



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**HRDC Claimable**

\*to be applied



**BEM CPD Hours**

\*to be applied