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The Disaster Risk Reduction Advisory Board (DRRAB)
Water Resources Technical Division (WRTD)

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IN SUPPORT OF
NATIONAL DISASTER PREPAREDNESS MONTH
(BULAN KESIAPSIAGAAN NASIONAL)

WEBINAR ON:

LEVERAGING FLOOD MAPS IN ADAPTING TO CLIMATE CHANGE

&

AI-DRIVEN COMMUNITY-BASED URBAN FLOOD RESILIENCE: MALAYSIA'S WAY FORWARD

5 OCTOBER 2024, SATURDAY
9.00 AM - 11.00 AM

ZOOM ONLINE

BEM APPROVED CPD: 2 **CPD REF. NO.: IEM24/HQ/362/T (W)**

REGISTRATION FEES:

- IEM Student Members - Free
- IEM Members - RM15
- Non IEM Members - RM70

SCAN ME

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THE SYNOPSIS & BIODATA OF SPEAKER

Ir Ts Noor Aishah binti Zaharin
Speaker

Ir Ts Noor Aishah binti Dato' Sr Zaharin is a senior engineer, serving the Department of Irrigation and Drainage, Malaysia. She is currently attached to the Flood Management Division. She has an established professional experience for almost 20 years as an engineer particularly in the field of flood engineering, river modelling, flood forecasting, river basin management and river rehabilitation works. She graduated from Universiti Teknologi Malaysia with a degree in Civil Engineering and master's master's degree in Civil Engineering majoring in Construction Management from the University of New South Wales, Sydney. She presently serves as the Deputy Chairman of IEM Water Resources Technical Division in addition to being the Honorary Secretary of Malaysia Water Partnership.

LEVERAGING FLOOD MAPS IN ADAPTING TO CLIMATE CHANGE

Flood is a significant and recurrent natural disaster in Malaysia, posing significant threats to human life, property, and economic stability. Based on Updating of Condition of Flooding and Flood Damage Assessment in Malaysia study, completed in 2023 by the Department of Irrigation and Drainage (DID) Malaysia, 13.4% of Malaysia's land is susceptible to flooding, affecting 10.4 million population and resulting in an estimated RM 18.1 million in damage annually.
Climate change presents the increase in temperature, resulting in frequent and severe heavy rainfall events. This subsequently have led to increased flooding and periods of drought. Sea level rise brought forth by climate change puts coastal residents, infrastructure and ecosystem at risk.

Adapting to climate change has become prominent in promoting community resilience. The Government has consistently provided resources and funds for programs and activities related to climate change. Following decision by Majlis Sumber Air Negara (MSAN) in 2008 and cabinet decision in 2009 on flood risk management, DID has embarked in preparation of flood hazard maps (probable flood inundation map) using river hydrodynamic modelling. The preparation of such maps has evolved in tandem with the state of technology.

Probable flood maps are invaluable in the context of climate change adaptation, providing a foundation for risk assessment, planning, policy-making, and community resilience. By integrating these maps into comprehensive climate adaptation strategies, societies can significantly mitigate the impacts of flooding, safeguarding lives, infrastructure, and economic stability.

Ir. Ts. Dr. Teo Fang Yenn *is currently a Professor of Water and Environmental Engineering at the University of Nottingham Malaysia and Chair of the International Association for Hydro-Environment Engineering and Research (IAHR), Malaysia Chapter. He is also the Treasurer of International Water Association (IWA) Specialist Group on Sustainable Coastal and Estuarine Development. He obtained a PhD in Civil Engineering from Cardiff University, UK. He has an established professional experience of over two and a half decades as an engineer, science researcher, and senior manager in the field of civil and environmental engineering, particularly water engineering and management in a changing environment, with expertise in hydro-environmental engineering, hydrology and water resource management, river and coastal engineering, flood risk, and urban stormwater management. He is the Professional Engineer (P.Eng.) with Practising Certificate; Professional Technologist (P.Tech.); International Professional Engineer Register (Int.PEng.); ASEAN Chartered Professional Engineer (ACPE); Fellow of ASEAN Academy of Engineering and Technology (FAAET); Fellow of Higher Education Academy (FHEA, UK); Fellow of the Institution of Engineers, Malaysia (FIEM); and Member of the Institution of Engineering and Technology (MIET).*

Prof. Ir. Ts. Dr. Teo Fang Yenn
Speaker

AI-DRIVEN COMMUNITY-BASED URBAN FLOOD RESILIENCE: MALAYSIA'S WAY FORWARD

Malaysia faces major water challenges caused by urban flooding, which are exacerbated by its tropical climate and rapid urbanisation. The revolutionary potential of artificial intelligence (AI) is being explored in terms of enhancing community resilience against urban flooding in the country. More research is needed on how AI technologies can improve flood prediction, real-time monitoring, and early warning systems, thereby reducing the impact of flooding on urban areas. AI technology can assist in determining the critical factors impacting resilience and enhancing the efficacy of current policies and governance structures by evaluating the adaptive capacity of Malaysian communities. Numerous studies highlight the critical importance of community involvement and suggest using AI-driven educational resources to improve awareness and flood preparedness. It also supports the use of AI to optimise resource allocation for flood prevention and recovery, as well as innovative approaches to enhancing urban infrastructure design. Furthermore, the best flood management practices involve the development of AI-driven decision support systems to enable real-time adaptive responses by local authorities and communities during flood disasters. AI-driven flood resilience measures can be tested through case studies and suggested pilot projects, which also provide a roadmap for putting these solutions into practice across the nation. Through the integration of AI with adaptive governance and the promotion of community involvement, Malaysia has the potential to greatly improve its urban flood resilience, thereby guaranteeing its residents safer and more sustainable cities.