

FACING THE CLIMATE CRISIS: UiTM PULAU PINANG BRANCH TRANSLATES FLOOD EARLY WARNING INTO SUSTAINABLE COMMUNITY ACTION AT KAMPUNG LABUH BANTING



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Date: 20 June 2026

Climate change is no longer merely an academic concern but a pressing reality that continues to challenge local communities. Kampung Labuh Banting is particularly vulnerable due to its strategic location within a critical hydrological zone. Although previous flood mitigation projects have significantly reduced the occurrence of major floods, the increasing frequency of extreme weather events driven by global warming continues to pose new risks.

Located downstream of Sungai Kulim, Kampung Labuh Banting experiences rapid increases in water levels whenever heavy rainfall occurs in the upstream catchment. Floodwaters often carry large volumes of floating debris, including logs and organic waste. The situation becomes more critical when high flows from Sungai Perai coincide with sudden water discharge from Sungai Kulim. Rising global sea levels have also intensified tidal surges in Sungai Perai, creating a severe backwater effect that worsens flooding in residential areas and surrounding paddy fields. The combination of climate change impacts and complex hydrological conditions places the village in a high-risk zone, highlighting the urgent need for comprehensive community adaptation strategies.

Recognising this responsibility, Universiti Teknologi MARA (UiTM) Pulau Pinang Branch organised the Community Resilience and Local Preparedness Programme in collaboration with the Malaysian Civil Defence Force (APM) and the Department of Irrigation and Drainage (JPS). The programme reflects UiTM's commitment to supporting the United Nations Sustainable Development Goals (SDGs), particularly:

SDG 11 – Sustainable Cities and Communities: Strengthening local resilience to reduce disaster risks, safeguard public safety, protect logistics networks, and sustain community livelihoods. This is especially important as Kampung Labuh Banting depends on eco-tourism and river-based fishing activities as primary sources of income.

SDG 13 – Climate Action: Enhancing institutional and community capacity through early warning systems, disaster risk reduction, and proactive adaptation to climate-related hazards.

The programme adopted a Climate Change Education approach that actively engaged community members in disaster preparedness. Through a table-top simulation exercise, 40 village residents collaborated to identify, analyse, and map critical information relating to their local environment. Participants assessed flood-prone areas, topographical conditions, logistical challenges, socio-economic impacts, and infrastructure vulnerabilities. The findings contributed to the development of a comprehensive community emergency response plan that will support local authorities and emergency agencies, including the National Disaster Management Unit, APM, the Fire and Rescue Department, and the District Office, in conducting more efficient and coordinated disaster response operations.

A key sustainability element of the programme was its knowledge transfer model. Prior to engaging with the community, UiTM staff received intensive technical training from APM experts led by Col. (PA) Lokman Hakim Abdul Rahman, Director of APM Pulau Pinang, together with Capt. (PA) Muhammed Ameen Salleh Mura, Capt. (PA) Mohd Fadhil Fahmi Zaini, and Lt. M (PA) Syukran Ahmad Amir Shaharuddin. Through this train-the-trainer approach, UiTM researchers were equipped to serve as facilitators, ensuring the long-term sustainability and continuity of community resilience initiatives.

This programme demonstrates that UiTM Pulau Pinang Branch's Sustainable Campus agenda extends well beyond conventional green practices. By actively participating in Community-Based Disaster Risk Management (CBDRM), the university has made a meaningful contribution to climate change adaptation and disaster resilience. The emergency action plan developed collaboratively with the residents of Kampung Labuh Banting stands as a testament to how academic expertise, government agencies, and community participation can work together to build a resilient, sustainable, and disaster-ready society.

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