

TACKLING FLASH FLOODS IN KL

FREQUENT flash floods in the Klang Valley have become more distressing, particularly for residents who stay in low-lying areas or those who commute by car and park in office basements.

Last year, the Klang Valley experienced the worst flooding after a two-day continuous heavy rainfall on Dec 17 and 18, followed by two (minor) floods on March 7 and April 25 this year.

Apparently, the current administration and Kuala Lumpur City Hall (City Hall) have only recently become more proactive in flood management and mitigation measures.

City Hall is committed to tackling the flash floods problem by introducing 14 interim measures, with a budget of RM10 million, under the 2022 Flash Flood Mitigation Action.

The following are policy initiatives EMIR Research would like to recommend to the government and City Hall to implement for Kuala Lumpur

1. Create more mini forests as well as pedestrian walkways and cycling pathways to reduce carbon emissions.

Mini forests, despite covering only small areas of land, could provide habitats for birds and insects. At the same time, they could restore the city's biodiversity.

Permeable, highly-porous materials could be used to construct pedestrian walkways or cycling pathways. Water would seep through the surface and become groundwater or flow into drainage systems.

2. Utilise idle land and abandoned buildings to grow food crops. This can be made possible by agritech such as hydroponic, as well as indoor and



Without effective mitigation measures and with unpredictable weather patterns, flash floods might be the norm in Kuala Lumpur. FILE PIC

vertical farming. Converting empty spaces into farms would encourage local food production and reduce greenhouse gas emissions.

Alternatively, some farmers could consider relocating their agricultural sites to rivers and lakes and even coastal areas to create floating farms.

Thus, farmers could compact and layer plants to become rafts and plant seeds in them. The purpose of the rafts is to allow agricultural farms to float on top of the floodwaters.

3. Increasing the number of car-free zones and boosting public transport

services would encourage citizens to reduce the use of privately-owned vehicles. Prioritising walking, cycling, using public transportation and car-pooling would reduce carbon footprint in highly urbanised areas.

4. Introduce reforestation around low-lying and flood-prone areas to regulate water flows, act as barriers against storm surges and protect against erosion and mudslides.

5. Clear solid pollutants that clog drains and rivers on a weekly basis. The government could instal simple, custom-designed surveillance Inter-

net of Things (IoT) modules at designated spots along rivers to keep track of the clearance progress.

The IoT package can consist of a pollution detection sensor, a camera, a micro-controller, a transmitter and a rechargeable lithium-ion battery.

The capacity of rivers and drains should also be increased.

6. Construct swales along major highways, roads and housing areas prone to flooding.

Swales are shallow, broad and vegetated channels that could store or convey stormwater and remove

pollutants. This can reduce flooding.

7. Create awareness campaigns and education programmes to promote the understanding of environmental issues, especially natural disasters.

8. Continue developing effective early warning systems and disaster risk-reduction plans. For instance, MetMalaysia and the National Disaster Management Agency (Nadma) could apply Geographic Information System (GIS) to produce a flood hazard map daily, identifying high-risk flood areas.

9. Nadma and the National Security Council (NSC) could warn the public through the Short Message Service (SMS). By doing this, residents who stay in low-lying areas could put their belongings in waterproof containers and move electrical appliances to higher ground when needed.

10. The current administration should form a Climate Change Commission comprising local and international experts to provide policy recommendations on climate change matters, including adaptation and disaster risk management in the country.

11. All Malaysians must also do their part in taking care of the environment by not dumping rubbish in drains and rivers.

The behavioural change among citizens would prevent further clogging of drains and rivers, reducing the risk of intense flooding, particularly in Kuala Lumpur, which has the potential of becoming a flooding city.

AMANDA YEO

Research analyst
EMIR Research
Kuala Lumpur