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$125m research project to protect coasts, prevent floods

A $125 million research programme dedicated to strengthening Singapore's coastal protection and flood management capabilities will be launched, said Senior Minister of State for Sustainability and the Environment Koh Poh Koon on Thursday.

National water agency PUB said that the programme can help to support its nationwide site-specific coastal protection studies and its coastal and inland flood model, which have been launched to better determine the impact of climate change on Singapore's coastal areas.

The new programme will consist of four research areas that collectively aim to develop innovative, sustainable and smart solutions for Singapore's urban and land-squeezed environment – a challenge which many other coastal cities also face, said PUB.

This includes developing sustainable coastal protection solutions, integrating the use of nature-based solutions such as mangroves, as well as smart management solutions, such as through the use of artificial intelligence.

The programme will be hosted at a new multi-institutional Centre of Excellence (CoE) at the National University of Singapore, with Nanyang Technological University, the Singapore University of Technology and Design, Singapore Institute of Technology and the Agency for Science, Technology and Research as partner institutes.

High tide caused seawater to overflow at East Coast Park Area B on Feb 22. Sea levels around Singapore are projected to rise by up to 1m by 2100 due to climate change, which could also lead to more extreme storms. ST PHOTO: LIM YAOHUI

Ms Hazel Khoo, director of PUB's Coastal Protection Department, said: "Through the CoE, we are looking at creating around 40 to 50 new research jobs, as well as training around 20 to 30 PhD students.

"At the same time, there are synergies for institutions partnering the CoE to develop undergraduate specialisation in coastal engineering and postgraduate programmes in climate adaptation and flood management, so that we can build a sustained pipeline of local professionals for coastal research and the industry."

With climate change, sea levels around Singapore are projected to rise by up to 1m by 2100.

Extreme storms with higher rainfall intensities could become more frequent, resulting in increased flood risks.

As such, it is critical for Singapore to enhance its overall coastal and flood resilience, said PUB.

Ms Khoo said that the programme aims to build knowledge in the modelling of coastal processes, joint occurrences of extreme sea levels, waves and storms, as well as how they will be affected by sea-level rise and climate change.

This would be crucial in determining the effects of sea-level rise and climate change on coastal processes and inland flooding, providing key inputs to guide the development of optimal solutions, she added.

Dr Koh said: "The (programme's) applied research and living lab components will support the testbedding of inter-disciplinary urban flood solutions and equip our industries with the capability to develop and eventually export the next generation of coastal and flood protection solutions."

Cheryl Tan