

NTU launches interdisciplinary programme to study climate change

It aims to create solutions, educate future leaders to form resilient world

Cheryl Tan

A new \$50 million interdisciplinary research programme launched by Nanyang Technological University (NTU) on Wednesday will examine various aspects of climate change.

The Climate Transformation Programme, which will be led by NTU's Earth Observatory of Singapore (EOS), will look to create climate solutions and educate future leaders to form a resilient and sustainable world.

Speaking at a panel discussion of the programme at the EOS 15th anniversary celebration at Shangri-La Rasa Sentosa, Minister for Sustainability and the Environment Grace Fu said Singapore is modelling the impact of climate change both locally and regionally.

"This will help us to formulate in an iterative way solutions that will protect our people and protect our properties," she said. It will allow Singapore to be prepared for dry months and enhance resilience against inland flooding for very wet months, for instance, she added.

She said the Government will share some of the findings with EOS and other agencies like the Meteorological Service Singapore, as well as its South-east Asian counterparts, so that they can be better prepared for varying weather patterns arising from climate change.

The programme will be supported by a \$50 million investment over seven years, with \$47 million from the Ministry of Education and the remaining amount from NTU. Research will be conducted under six strategic clusters.

For instance, the programme will look at the health impact from heat and air pollution fuelled by climate change, how climate change could affect business risks, as well as novel engineering solutions for climate adaptation.

Giving some examples of the research programme, Professor Benjamin Horton, the director of EOS, said NTU has a partnership with insurance company Prudential to look into the health impact stemming from climate change and how it could affect one's life insurance.

Another collaboration with lux-



Minister for Sustainability and the Environment Grace Fu (centre) at the Earth Observatory of Singapore's 15th anniversary celebration, with (from left) Professor Benjamin Horton, director of the EOS; Professor Luke Ong, vice-president of research at Nanyang Technological University; Ms Trina Ng, PhD student at the Asian School of the Environment (ASE) and EOS; and Associate Professor Susanna Jenkins, associate chair (faculty) at ASE. PHOTO: NTU

Grace Fu to co-facilitate negotiations at UN climate conference

Minister for Sustainability and the Environment Grace Fu will be co-facilitating negotiations on mitigation at the upcoming United Nations climate conference, which will be crucial in limiting global temperature rise to 1.5 deg C above pre-industrial levels.

As the world has already warmed by around 1.2 deg C, mitigation – which involves reducing global greenhouse gas emissions – is a "key track of work in the climate negotiations", requiring

strong collective action by all countries to limit global temperature rise, she said in a Facebook post on Wednesday.

The 28th Conference of the Parties to the UN Framework Convention on Climate Change, or COP28, will be held in Dubai from Nov 30 to Dec 12.

Ms Fu will be co-facilitating the negotiations with her Norwegian counterpart, Minister of Climate and the Environment Espen Barth-Eide. It will be the third time both ministers are co-facilitating at the conference. They had partnered at COP26 in Glasgow, Scotland, and COP27 in Sharm-el-Sheikh, Egypt, during ministerial consultations on issues relating to carbon markets, or Article 6 of the

Paris Agreement.

A major UN report released on Sept 8 – known as the global stocktake synthesis report – found that while there has been global progress in climate change mitigation since the landmark Paris Agreement in 2015, more needs to be done to limit temperature rise to 1.5 deg C.

Countries would also have to set more ambitious targets in mitigating their greenhouse gas emissions in order for the world to reach net-zero emissions by 2050. One key step would entail scaling up renewable energy, while phasing out all unabated fossil fuels such as coal.

The global stocktake process, which takes place every five years,

will wrap up at COP28. This will help to guide a new round of nationally determined contributions, or NDCs, which are country-specific climate action plans. The stocktake will help to pinpoint areas where climate mitigation is falling short.

In 2022, Singapore updated its NDC to reduce emissions to around 60 million tonnes in 2030 after peaking its emissions earlier. This stronger target precedes a previous goal to peak emissions at 65 million tonnes by 2030.

Ms Fu told Parliament in November 2022 that Singapore will peak its greenhouse gas emissions between 2025 and 2028 at around 65 million tonnes.

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PROTECTING PEOPLE AND PROPERTIES

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MINISTER FOR SUSTAINABILITY AND THE ENVIRONMENT GRACE FU, on how Singapore is modelling the impact of climate change both locally and regionally.

and modelling climate change.

Three cross-themes – sustainable societies, satellite remote sensing and artificial intelligence – will integrate findings across the six clusters.

The programme will bring together researchers across many different disciplines at NTU, and other local universities such as the National University of Singapore, Singapore Management University and the Singapore University of Technology and Design, and research centres across the globe.

It is expected to recruit 30 doctorate students and close to 45 researchers for its projects over seven years, to develop climate leaders in fields ranging from the sciences to the humanities.

Asked about the kind of knowledge gaps that the programme will seek to plug, Prof Horton told ST that while climate scientists are beginning to better understand the physical impact of climate change – such as sea level rise, flooding and heatwaves – it has yet to be properly quantified.

For instance, little is known about how climate change could affect natural ecosystems from rainforests to mangroves, how it could affect construction workers, as well as the world's finances and energy use.

Therefore, interdisciplinary studies – bringing together scientists, geologists, social scientists and business students – will be required to find solutions, he said.

He noted that the new programme has come at a time of climate emergency – with the first comprehensive health check of the Paris Agreement showing that countries must take more ambitious action to cut emissions and limit global warming to 1.5 deg C.

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ury brand Chanel will help the company to diversify its supply chain, as increasing extreme weather events such as drought,

forest fires and severe rainfall mean it would not be ideal to have all its suppliers in one location.

Other aspects of the programme

will examine how biodiversity such as flora and fauna responds to climate change, mapping out ways in which the world could get

to net-zero through a negative emissions pathway, for example by planting trees, and to tackle knowledge gaps in understanding