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WOMEN ON A MISSION

To mark the International Day of Women and Girls in Science, which was celebrated last Thursday, Shabana Begum and Cheryl Tan spoke to three women who have excelled in jobs dominated by men and who hope to inspire others to do the same.

Researcher pilots drones to aid conservation efforts

Shabana Begum

When she was a child, Ms Tasya Vadya Sarira's parents – both architects – would point out interesting buildings to her. But nature beckoned and her eyes would stray to a bird perched near a window or trees lining a street.

Born in Indonesia, Ms Tasya and her family have been living in Singapore since she was five.

In her second semester at the University of Adelaide in 2012, Ms Tasya switched from reading physics to pursuing ecology and the environmental sciences.

Her ambition is to protect South-east Asia's forests and explore different technologies for mapping areas for conservation.

Now 28, Ms Tasya is two months away from completing her PhD with the university's applied ecology and conservation group. She is currently a visiting researcher at the Centre for Nature-based Climate Solutions at the National University of Singapore (NUS).

Since her undergraduate days, the Indonesian has studied plant diversity in arid South Australia, examined mosquito-breeding habitats in wetlands in Australia, and helped to map the distribution of orang utans in Sarawak.

But helming her first drone mission to examine the health of reforested trees in the Adelaide Riverlands in January last year has been her most memorable expedition to date. It felt like a coming-of-age moment for the certified drone pilot when she flew drones over two swathes of flat and hilly land without supervision. But the mission had a rocky start.

"The night before, all our sensors malfunctioned and we were up until 2.30am to debug them and do some recoding," she recounted.

After a brief two-hour shut-eye, Ms Tasya and her research partner made the three-hour drive to the Riverlands, to send the drones up by late morning.

By late afternoon, they had finished mapping the areas multiple times. Collectively, both plots covered more than 2ha.

"There was panic when the sensors failed and it was a long day, but it was a great day in the end," she said. "The next day we looked over the data that we got, and the images were very clear, with good information that we could use for the study."

That was her last fieldwork before the Covid-19 pandemic hit, and in March last year she returned to Singapore to be closer to family.

When Ms Tasya was in Adelaide, the researcher was one of two women out of 10 people who worked in a drone facility.

Observing that the geoscience field is still somewhat male-dominated, she said: "In geoscience conferences, you can see the majority there are middle-age white men."

But her passion for emerging satellite technologies was all that mattered.

"It can be intimidating at the start, when you're looking for mentors and you realise the majority of them are male, but that shouldn't be a hindrance. If you're really interested in geosciences, just go for it. Don't see anything as a barrier."

Nowadays, Ms Tasya, together with her colleagues at NUS, is using maps and satellite images to identify intact rainforests and reforested areas in South-east Asia that are suitable for investors to financially support in conservation efforts.

Apart from storing carbon, some forested areas can regulate freshwater by reducing soil erosion and filtering pollutants, for instance, benefiting communities downstream. Untouched habitats ensure a steady stream of pollinators to nearby agricultural lands, Ms Tasya said.

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Ms Tasya Vadya Sarira next to a Rafflesia in Sarawak, where she helped to map the distribution of orang utans with University of Adelaide colleagues in 2018. Her ambition is to protect South-east Asia's forests and explore different technologies for mapping areas for conservation. PHOTO: COURTESY OF TASYA VADYA SARIRA