ULU PADAS DAM AND SBAUP TO MEET FUTURE WATER NEEDS

STORIES BY DANIAL DZULKIFLY

SABAH has no shortage of rivers, but turning that natural abundance into reliable water and electricity has proved much harder.

Along the west coast, water shortages return during the dry months, while a power system that still depends heavily on natural gas is having to accommodate new industrial demand. For a state seeking to attract more investment, the question is increasingly whether its basic infrastructure can keep pace.

The Ulu Padas Hydroelectric Project (UPHEP) is one attempt to address those constraints by making a single piece of infrastructure serve more than one need. More than 100km upriver from Tenom and Sipitang, deep in the forest, Upper Padas Power Sdn Bhd (UPPSB) is building a roller-compacted concrete dam that will support a 187.5MW hydropower plant while also creating the reservoir for a new water-supply system serving the west coast.

The proposition is simple enough to explain in one line, says UPPSB chairman and Sabah Energy Corporation (SEC) group chief executive officer Datuk Adzmir Abd Rahman.

"One river, one dam, two outcomes," says Adzmir in a sit-down interview with *The Edge*.

For Adzmir, the significance of the two components lies in what they can bring to Sabah beyond energy and water. As construction gathers pace, the project will create work for both skilled and general workers, while the completed facilities will need technicians and engineers to keep them running.

That, he says, is where getting Sabahans involved becomes important. By filling more of these roles locally, the hope is that a greater share of the opportunities created by the project will stay within the state.

The dam regulates the flow of the Padas River and channels part of it through a 10km tunnel to the powerhouse, while the reservoir becomes the source for the Skim Bekalan Air Ulu Padas (SBAUP). The same engineering footprint is being used to support two needs that have long constrained Sabah's development.

For the chief executive officer of UPPSB and an executive director of Gamuda Engineering, Muhamad Elias Johari, the logic becomes clearer when viewed against the state's future water demand.

"When we analyse the future demand for water in Sabah, particularly on the west coast, the reserve margins are on the low side, so there is a need for a major injection of water supply in the next five years," he says.

Rather than build another dam solely for water supply, the project team decided to use the reservoir already being created for the power project.

The first phase of SBAUP will draw 350 million litres a day for treatment, with the system designed to eventually reach 950 million litres a day. A treatment plant is planned in Beaufort, with an estimated 220km pipeline network connecting the supply from Sipitang, Kuala Penyu to Kota Kinabalu and other areas along the west coast.



Ulu Padas Hydroelectric Project (UPHEP)



The approach is what Gamuda describes as a "bolt-on", where the water scheme makes use of infrastructure required by the power project in the first place. It also means the state does not have to create a separate reservoir, go through another round of approvals or clear another stretch of forest for a second dam.

The same thinking extends to energy as once the dam is completed, a 150MWac floating solar array is planned for the reservoir, turning the site into a hybrid hydro-solar hub.

Elias says the two sources complement rather than compete with each other, as hydropower can provide more consistent generation, while solar output rises during daylight hours and falls after sunset.

"Hydropower gives us a stable base load that delivers consistent power at any time of the day, but solar is intermittent. So what this does is smoothen the curve. During the day, the grid can accept more solar, and at night, when people switch on their lights and the air conditioning comes on and demand climbs, that is when hydropower smoothens it out."

Rather than simply stopping the river's flow, the reservoir is intended to regulate it, allowing water to continue downstream while giving the state greater flexibility to manage supply during periods of heavy rain and drought.

During extreme rainfall, Elias says, the reservoir can hold back some of the increased upstream flow and moderate the amount moving downstream. During drought, stored water can instead be released to support the river.

"The reservoir body is so large that even if you had no water in the river, it could sustain supply for at least two weeks," he says, adding that the ability to store water is central to why the project has taken on a significance beyond its power-generation capacity.

As the project took shape, the physical characteristics of Ulu Padas also opened up possibilities beyond the original hydropower proposal. The area has a substantial catchment and a relatively narrow, elongated valley, making it suitable for river storage without the vast inundation associated with some of Malaysia's larger hydroelectric schemes.

A PROJECT THREE DECADES IN THE MAKING

The ambition driving Ulu Padas is a 30-year vision finally coming to fruition. UPPSB and Conlay Group director Lim Chin Hong, a Kota Belud native, describes the mega-project as a '千载难逢' (qiān zǎi nán féng)—a once-in-a-lifetime opportunity for the region. Spanning a 100-kilometre radius, the initiative seamlessly integrates sustainable green energy, water supply, floating solar and biodiversity conservation. Built to operate for over a century, it is designed as a legacy project that will deliver transformative benefits across Sabah, particularly along the West Coast corridor from Sipitang to Kota Kinabalu.

The idea went through feasibility studies and site investigations but remained on the drawing board for decades. Conlay became involved in 2012 and thereafter went through the submissions, briefings and tender process, eventually obtaining approval.

By the time the project began moving towards construction, the proposition had grown beyond the original hydropower plan.

"While we are talking about the potential of hydropower, actually in our minds we already have the idea of water supply and the feasibility of incorporating floating solar," Lim says.

Lim points to Bakun in Sarawak as a useful comparison. Bakun has a generation capacity of 2,520MW and a reservoir covering 695 km^2, while Ulu Padas, formally recognised as an integrated hybrid renewable energy project, is designed with generation capacity of 187.5mw and a 150mwac floating solar facility, covering an inundation area of about 1,600 acres, or roughly 6.6 km^2.

"In terms of resource utilisation, this is a more sustainability-driven development model. We are able to generate more value from each acre of land, while keeping the amount of forest used to a minimum and preserving as much of the surrounding environment as possible."

For Lim, the value lies in how much can be achieved within the same landscape. "Three assets, one ecosystem and endless sustainability". So that is what makes the whole project different.

The project has evolved as new partners have come in, with Gamuda joining the venture and bringing in its technical expertise to strengthen the technical package and integrate the water-supply and floating-solar components into the broader development.

Conlay is involved through its subsidiary Kerjaya Kagum Hitech JV Sdn Bhd (KKHJV), one of the shareholders in the project company.

UPPSB is owned through UPP Holdings, with Gamuda having a 45% stake, Sabah Energy Corporation (SEC) a 40% stake and KKHJV 15%, with Gamuda Conlay Consortium appointed as the total development contractor.

For Adzmir, the state's equity stake is important because it gives Sabah a direct interest in the project's delivery and ensures that its returns flow back to the state, allowing Sabahans to share in the value created by the project.

"The value chain is something we need to protect along the way, from using local suppliers to creating employment. Our priority is to employ Sabahans, especially people from rural and underprivileged communities."

Adzmir sees that continuity in broader terms, arguing that a project of this scale cannot be carried forward through engineering alone. The government has to set the direc-

tion, while engineers, regulators, communities and project partners work together to carry it through.

"Everybody has to go together," he says. That support was reinforced when the project was officially launched in December 2023 by Prime Minister Datuk Seri Anwar Ibrahim and Sabah Chief Minister Datuk Seri Panglima Hajiji Noor. That gives political strength to the project, and we can build it without interruption.



UPPSB chairman and Sabah Energy Corporation group chief executive officer Datuk Adzmir Abd Rahman



UPPSB and Conlay Group director Lim Chin Hong



UPPSB chief executive officer and Gamuda Engineering executive director Muhamad Elias Johari

WATER BEFORE INVESTMENT

The physical infrastructure matters because the state is trying to expand an economy that is increasingly dependent on reliable utilities.

Adzmir argues that Sabah cannot wait for investors to arrive before building the infrastructure they require.

"We don't wait for investment to come before we build utilities. We give investors a reason to come to Sabah and build this investment here."

That is particularly relevant as industrial activity grows in areas such as the Sipitang Oil & Gas Industrial Park (SOGIP), as well as the Kota Kinabalu Industrial Park, where large investors require substantial amounts of both power and water.

With the state's power reserve margin tightening, the ability to provide reliable utilities is also becoming increasingly important to investors considering manufacturing and other energy-intensive operations, with water supply proving just as important as access to power.

Elias says that is why the project's benefits should be viewed beyond its 2030 completion date. "Whenever heavy industries look at a location, the first two things they look for are steady water and steady power," he says.

The project is being built not only to meet today's demand but to give Sabah room to accommodate investments that may arrive later, from steel and port-related industries to more advanced manufacturing.

For Lim, however, the two utilities are not equal in terms of how easily the state can find alternatives. "The problem for investors in Sabah is water. Power, you can still manage with gas. But water, if you don't have water, there is nothing you can do."

That is the constraint the water-supply component is intended to address. The first 350 MLD phase of SBAUP is scheduled for completion by the end of 2029, while the hydropower dam is targeted for completion by the end of 2030.

The hydropower plant itself is expected to generate about 1,052GWh of electricity a year, increasing Sabah's dependable power capacity by roughly 16% and doubling its renewable-energy mix. That supports the state's target of raising renewable generation to about 35% by 2035.

Adzmir does not see that transition as an immediate replacement for gas. "Natural gas is our lifeline, and it will be there for the next 20 or 30 years," he says. "But natural gas is not the final destination. The final destination is renewable, and part of that is hydro."



Sabah State Water Department director Chee Chun Chieh (front, right) officially handing over the construction site to UPPSB chairman Datuk Adzmir Abd Rahman (front, left) by presenting a commemorative plaque

BUILDING WITH THE PEOPLE AROUND THE RIVER

The scale of the project means its footprint extends beyond the dam and reservoir. Most of the communities around the site are Murut, and the project's developers have spent

years engaging villages in the area, working with community leaders and PACOS Trust on socioeconomic studies for benefit sharing.

Much of that relationship is shaped by things that do not appear on an engineering drawing. A village water catchment, for instance, has to remain clean, while a rutted track used by both the community and the project may need to be improved so that it remains passable.

Where construction affects someone's trees or crops, the developer has to compensate them, while ancestral graves require a different kind of care. Those sites have to be identified and discussed with the community and, where relocation is unavoidable, moved with the appropriate ceremony in accordance with local cultural and religious practices. When artifacts are found in the graves, the descendants are consulted on whether they wish to keep the objects. Otherwise, the finds are donated to the Museum Department for safekeeping.

For Lim, the relationship with the surrounding communities is something that will continue beyond construction.

"Our goal is to come here to grow together with you."

The same emphasis on local participation extends to the workforce, where villagers who know the forest, its trails and terrain bring knowledge that can be difficult to replicate through outside hires. Many are now finding work on the project.

Adzmir says local people and local suppliers come first, particularly in the rural and less advantaged communities along the river.

"Wherever we work, we give back," he says, and the economic impact is already extending beyond the construction site. With workers needing accommodation, food and other services, the company is renting houses and offices in nearby communities, while local traders and suppliers are benefiting from spending generated by a large workforce operating in an otherwise remote part of the state.

The opportunities are intended to continue after construction, with the completed facilities requiring plant managers, technicians, maintenance workers and people to monitor the reservoir and surrounding environment.

As construction moves towards its peak, Elias expects the project to become an increasingly important source of employment, with the professional workforce growing from around 150 people today to roughly 500 at peak of construction. He expects a sizeable number of those workers to be Sabahans.

That effort is already visible on the water scheme, where Elias says about half of the team are Sabahans under the age of 35. Among them are Gamuda scholars who gained experience outside the state before returning to bring those skills back home.

For Adzmir, that is ultimately tied to whether infrastructure can change the reasons young Sabahans leave in the first place. "We cannot ask our young people to stay based on sentiment. We have to build the kind of project that is worth a career."

He is specific about what that return should look like: not labour, but expertise. "Our hope, naturally, is to get our people back to serve us as capable experts, not as labourers," he says, pointing to engineers, technicians and skilled workers currently based abroad as the talent the project is ultimately trying to draw home.

For all that Ulu Padas will deliver in water and power, the people behind it are reaching for something harder to measure, a change in how Sabah builds. Adzmir wants the way this project has been run to serve as a reference for what comes after it.

"I would like to see the way we implement this project become a textbook for any development in Sabah," he says. "We want to document all of this, so that these steps can be replicated."

Lim also expects the project's benefits to reach well beyond the dam site. Water, in his view, is the constraint that has held Sabah's industry back, and freeing it is what opens the door to heavier investment and to the higher-paying work to retain Sabahans from leaving the state.

"The water storage will help the development of local industries and the moment the industry develops, the income for the people will naturally rise," he says.

Beyond power generation and water supply, Lim sees the reservoir and surrounding forest taking on a life of their own, with a lake stretching along some 30km of shoreline potentially becoming a draw for visitors.

"With the hydropower project, eco-tourism will be booming," he says, noting that the Forestry Department has already asked to establish a research station in the wider forest, drawn by the scale of the water resource created by the scheme.

Keeping that forest intact, in Lim's telling, is not a courtesy but a condition of the whole enterprise. A reservoir intended to supply the state for generations can only fulfil that role if the catchment feeding is protected as an asset in its own right.

"If we don't protect this area, our water source is going to be a problem," he says.

The proposal has existed since 1990. More than three decades on, the access tunnels, work headquarters, batching plants and temporary roads are finally taking shape deep inside the Padas catchment.

Construction of SBAUP formally began in May 2026, when Sabah's State Water Department handed over the development grounds to UPPSB at a site handover ceremony in Lok Kawi. The handover marked the start of the 42-month construction period, putting Phase 1 on track for completion by the end of 2029, a year ahead of the dam's scheduled completion in 2030.

HOW ULU PADAS IS BRINGING NATURE AND COMMUNITIES INTO THE PICTURE

AS demand for energy grows, the question surrounding major infrastructure is increasingly shifting from whether projects should be built to how they can create lasting value for the environment and communities around them.

The Ulu Padas Hydroelectric Project (UPHEP) in Sabah offers one example, bringing environmental science, community considerations and digital connectivity into the development process from the outset.

That thinking is reflected in Universiti Malaysia Sabah's (UMS) work at Ulu Padas, where the university is providing scientific expertise to help understand the area's biodiversity and guide how it is managed alongside development.

Assoc Prof Dr Fiffy Hanisdah Saikim, UMS' Institute for Tropical Biology and Conservation's director, says this represents a change in how biodiversity is considered in infrastructure planning.

"Traditionally, the biodiversity assessment and baseline studies have often been treated as a regulatory requirement. Infrastructure is designed first, environmental impacts are identified later and mitigation measures are introduced only after problems occur. We take the opposite approach. Biodiversity considerations were incorporated from the very beginning of the planning process," she says.



UMS' Institute for Tropical Biology and Conservation director Assoc Prof Dr Fiffy Hanisdah Saikim



UMS vice-chancellor Professor Datuk Dr Kasim Hj Mansor



Maxis chief corporate affairs officer Azizul Abdul Rahman

For UMS vice-chancellor Professor Datuk Dr Kasim Hj Mansor, science has a practical role to play in Sabah's development. Kasim, who is also a member of the Sabah Economic Advisory Council, says he wants the state to attract more investment and create greater opportunities for its people while building a better understanding of the natural environment around those developments.

"Science must come before irreversible decisions. Once a forest is cleared, a habitat fragmented and ecosystem fundamentally altered, science cannot simply turn back the clock," he says.

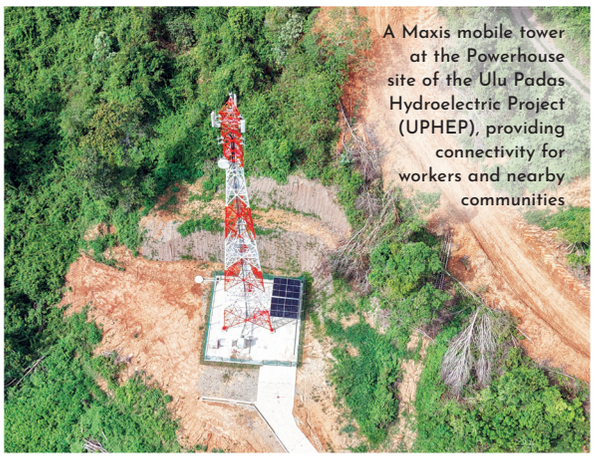
Before construction commenced, a team of 60, comprising UMS researchers, the project team and guides, went on an expedition to document and sample the area's flora and fauna, under the direction of the late Assoc Prof Dr Jaya Seelan, a leading conservationist and mycologist based in Sabah. The guides, drawn from nearby Murut communities, brought traditional ecological knowledge to the fieldwork — helping to identify sites and traces of elusive species.

Working from base camps, the researchers trekked for hours across thousands of hectares, carrying out camera trapping, bioacoustic monitoring, eDNA sampling, GIS mapping, species surveys, population assessments and forest inventory work.

Across five ecological zones, the team documented almost 1,500 species and taxa, including 31 threatened species and 15 species endemic to Sabah. The findings have helped identify priority conservation areas, while other zones have been earmarked for habitat restoration and invasive species management. Beyond the immediate scope of the project, the data gathered is also expected to extend scientific understanding of the biodiversity found across the wider Ulu Padas area. The same principle extends to the communities living around the project.



The late Dr Jaya Seelan (in blue) was part of the team supporting the on-ground biodiversity studies at UPHEP. Here, he is briefing the team on The BORNEENSIS Collection at UMS — a world-class biological repository and "living archive" dedicated to documenting Borneo's rich biodiversity. Samples collected from UPHEP will be stored here for further research to support conservation efforts in the area.



A Maxis mobile tower at the Powerhouse site of the Ulu Padas Hydroelectric Project (UPHEP), providing connectivity for workers and nearby communities

Telecommunications infrastructure developed as part of UPHEP is helping extend reliable connectivity across the remote project area. In late 2024, Maxis Berhad (Maxis) deployed two mobile macro sites at the project's Powerhouse and Dam Site, extending telecommunications coverage to Upper Padas and surrounding communities across three villages. The towers were subsequently brought into operation on 22 December 2025, benefiting more than 1,000 residents and workers.

Through Maxis's enterprise arm, Maxis Business, it is also providing managed solutions to UPHEP to support the project's connectivity needs.

For Maxis chief corporate affairs officer Azizul Abdul Rahman, connectivity has become an essential part of modern infrastructure.

"Connectivity is now fundamental to how we live and work. Whether in a remote area like Ulu Padas or in the city, everyone should have reliable connectivity. Our role is to ensure that no matter where people live, they can stay connected to the services, opportunities and people that matter. In line with the LESTARI sustainability framework for the telecommunications sector, we are committed to supporting social inclusion to ensure Malaysians have the digital access and skills to participate in today's economy," he says.

For residents, the change is felt in everyday life. Adrell Moris, who has lived in his village for about 30 years and works as a farmer, says residents previously had to travel to the river just to get a signal to contact family members living far away.

"We didn't know how they were doing. We couldn't go online to contact them, call them or find out how they were, whether they were healthy or not," he says.

The connection has also made it easier for residents to search for jobs and information online, while giving children greater access to learning materials.

For Herliana Rutin, who has lived in the area since childhood, finding a signal previously meant going to the riverbank, climbing hills or even standing close to the walls of her house. "Before the telecommunications tower was built, it was very difficult to get a signal," she says.

Now, she adds, residents can communicate without having to travel around looking for coverage, including when emergencies arise. "It makes things easier for us to communicate and stay in touch with others."

Fildah Emood, a housewife who has lived in the area for six years, says the improved connection has also helped families access information, education and employment opportunities.

Before the new coverage, she says, residents sometimes had to leave the area to find a signal, while children struggled to communicate with teachers and access learning materials.

Now, parents can manage online registrations and receive information by email, while young people can search for jobs and find opportunities shared by friends through WhatsApp. "Through the internet, they can find a lot more information and get more answers," she says.

For Fildah, the benefits are also personal. Her parents live far away, meaning previously she could be unaware when they fell ill. "So when the internet is stable, I can find out about it quickly," she says.

For a remote community, these everyday improvements can make a real difference, from staying in touch with family to accessing education, job opportunities, healthcare information and emergency assistance. Azizul says this is where the wider value of connectivity comes in.

"The towers were built to support project operations, but their real long-term value lies with the villages around them. Education means access to online learning resources previously out of reach. Healthcare means communication with clinics and remote consultations.

"Emergency response means raising an alert immediately, rather than travelling for help. And for livelihoods, it opens digital payments, market access and small business opportunities beyond the village," he explains.

"By extending connectivity to underserved communities such as these, Maxis has been supporting Malaysia's wider connectivity agenda, especially in growing coverage in rural areas. Our aim is to ensure that more Malaysians can access digital services and opportunities. We appreciate Gamuda placing their trust in our expertise for this project, and we look forward to further collaboration to expand coverage in other underserved areas," he concludes.

For UMS, Fiffy says inclusion also means involving communities in conservation, with the university's collaboration with local communities continuing beyond the baseline study through planned restoration and monitoring over five- and 10-year periods.

"We believe the community is the first conservationist. When we talk about sustainability and conservation, the community knows it best rather than us, the scientists and conservationists," she says.

"We move from asking: 'How do we compensate for environmental loss?', to asking: 'How do we prevent that loss from occurring in the first place?'". ●

This article is dedicated to the memory of Assoc Prof Dr Jaya Seelan, whose vision and leadership shaped the conservation approach at the heart of Ulu Padas.

TRAINING SABAHANS TO BUILD AND OWN A DIGITAL ECONOMY

AS Sabah looks to grow its digital economy, more opportunities are opening up for people who can build, create and solve problems with technology. The challenge is making sure Sabahans have the skills and confidence to grab those opportunities, whether that means writing their first lines of code, developing a new product or eventually building a business of their own.

It is this idea that is at the heart of the Gamuda AI Academy's Sabah campus. Since opening in July 2025, it has trained Sabahans from a range of backgrounds, many with little or no coding experience. As at June 2026, the campus had produced 95 graduates in three cohorts.

Managing both the Kuala Lumpur and Sabah campuses has given the Gamuda AI Academy team a direct comparison of how students approach the programme, and the Sabah cohort has shown a particularly strong appetite for learning.

The academy runs its Sabah campus in partnership with Sabah Ministry of Education, Science, Technology and Innovation, Sabah Net, the Sabah Creative Economy and Innovation Centre and the Human Resources Development Department.

From Cohort 1 onwards, students in Sabah have shown a warm reception to the programme, with many demonstrating a strong passion and eagerness to learn. There is a clear desire among students to acquire new knowledge, particularly as they recognise the growing relevance of artificial intelligence (AI) and its role in the future. However, for those already working or managing family and financial commitments, returning to conventional education for one or two years may not be practical.

The academy's intensive three-month programme provides an alternative pathway, allowing participants to gain relevant AI knowledge and skills in a shorter time frame.

The programme is offered free of charge and is open to Sabahans aged between 21 and 40 who are highly interested in learning Python, JavaScript and AI programming, including those with no prior coding background, with selected participants required to commit full-time to on-site classes in Kota Kinabalu.

For many students, the programme represents an opportunity to learn something new and highly relevant to the changing demands of the workplace.

One of those people is Adzrul Danin Mohd Faiz. A mechanical engineering graduate, he had spent two years as a lead product manager before joining the academy, and had once turned down a place at the Kuala Lumpur campus because of work commitments. When he later decided to return to his home state, the opening of the Sabah campus gave him another opportunity.

"I planned to go back to Sabah and found out that Gamuda had also opened the Sabah campus. So I reapplied and another offer was given to me to join the Sabah campus," he says.

Adzrul took the offer, and after completing the programme, he moved into software development in Kota Kinabalu, building on his engineering and product background without having to leave the state.

"Having previously worked in Kuala Lumpur, you notice the gap between Sabah and the peninsula. But with initiatives like this, I see a lot of potential in Sabahans. People are realising that AI is beneficial, and that they can use it to bring more good exposure to their businesses. This is where Gamuda has clearly been successful with this programme."



Dr Eliyana Mangutas and Adzrul Danin Mohd Faiz (standing, first and second from left) with their team at the Cohort 2 Demo Day, where they presented their capstone project, showcasing the skills, ideas and solutions they had developed throughout their journey



Graduates of Cohort 2 of the Gamuda AI Academy Sabah Campus, marking the completion of their AI learning journey.
The 29 graduates are part of a total of 95 students who have graduated from the Sabah Campus to date — all of whom are Sabahans.

The academy is not designed only for people with an existing technical background. The three-month programme also takes in participants with little or no coding experience, and the intensity is meant to bring students closer to the realities of working in the industry, says trainer Tay Yi Jiun.

"I've also thought about this question: How will people who come in with no background at all be able to survive? But then we've seen throughout the past cohorts that it is actually possible. The course itself is designed in a way to really push you, in three months, into the deep end. And it also mimics very closely what we have in the industry — what you work with, the tools that you use and how you use them."

There is also an element of discovery, with students placed in an unfamiliar setting and made to work through problems alongside people from very different backgrounds. Tay describes it as a kind of self-discovery.

"When you get thrown into this sort of environment, where it's so new to you, so different from what you expect, you sort of go through a process of self-discovery, like a little odyssey or a phoenix rebirth, that you discover a part of you that you never expected you had before."

"Honestly, there are so many projects that we've seen. And for a lot of them, you can see that the intention comes from the heart. Sabahans are actually deeply passionate about their state and the problems surrounding their life."

One project that stayed with him was a Cohort 3 team's digital assistant for Sabah's Native Court, which handles customary law and native land disputes. The students saw a court weighed down by backlog and short of manpower, and built a system pairing computer vision, speech-to-text and natural language processing to digitise parts of the process.

"They don't have enough manpower to handle their tasks in due time. I think it will impact a lot of the native and Sabah people."

The local grounding is what makes many of the Sabah projects distinctive. The capstone projects developed at the Sabah campus tend to be very grounded in the needs of the local community, resonating with people and addressing practical, relevant challenges.

When students create a solution using AI that is genuinely impactful, the results can be particularly meaningful in Sabah.

Examples include projects to translate native and other languages to assist neurodivergent people. The academy also brings outside stakeholders in early to assess whether a capstone idea could go beyond the classroom, allowing students to take it from concept to a prototype while keeping the problem genuinely relevant.

The same idea comes through in Dr Eliyana Mangutas' experience. A medical officer by training, she went through Cohort 2 and found herself among people bringing very different ideas and backgrounds to the programme.

"I find it incredible that we have all these resources, actually all these minds that are thinking of solutions all the time in Sabah, readily available. Given the right tool, given the right skills, these solutions can come to life and actually benefit not just those directly affected by the problems, but also Sabahans in general."

Her experience also fed into a capstone project. Working with Adzrul and a few others, their team built a proof of concept for an AI system to support work in emergency departments, speeding up data collection and helping flag cases that need urgent attention.



Tay Yi Jiun, a graduate of Cohort 1, returns as a trainer for Cohort 3, overseeing participants during a classroom session at the Gamuda AI Academy Sabah Campus.

The project was not presented as a finished healthcare product. Rather, its minimum viable product demonstrated that there was potential for such a system to improve the process.

Rather than steering graduates towards a single career, the academy gives them the skills to apply AI in the fields they already know, from software development and business to healthcare and community services.

As Sabah keeps investing in energy, water and other physical infrastructure, that kind of capability, grown locally, could prove just as important to its development.

The aim is to put the technology within reach of people who might never otherwise have tried it. AI can be seen "like a compass", showing people the direction.

The academy also sits alongside Gamuda's other work in the state. The Group is a partner in the Ulu Padas Hydroelectric Project and Ulu Padas Water Supply Scheme, meant to shore up Sabah's energy and water security respectively.



Participants of the Gamuda AI Academy Sabah Campus gather at the Sabah State Library for a three-month, full-time programme focused on practical AI development and applications across sectors in Sabah, including healthcare and other emerging areas.