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# Young and green

**Ten students learn, first-hand, that nature's beauty needs protection.**

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**S**UN, sea and beach ... Where else is there a better setting to teach a bunch of tertiary students about the environment than the lovely Pulau Perhentian Kecil?

This year, Bayer chose 10 finalists from around the country to be Bayer Young Environmental Envoys (BYEEs) and they were sent to the island with a purpose – to become ambassadors for the protection of Mother Earth.

Since 2006, Bayer in Malaysia has been selecting environmentally aware youths to attend the five-day camp, during which participants brainstorm and are exposed to certain aspects of conservation.

At the end of the camp, two candidates get chosen to represent Malaysia at Bayer Group's headquarters in Germany, where they will meet envoys from 17 other countries.

## On the go

From the second day at camp, after arriving at Shari-La Island Resort the previous evening, it was non-stop activity all the way, starting with aerobics and line dancing at 7am.

As this year's focus was water, participants were taught how to measure water quality on the first day. (The focus was mangroves in 2006 and forests, last year.)

Besides indoor presentations and discussions facilitated by lecturers from Universiti Putra Malaysia's (UPM) Faculty of Environmental Studies, the envoys were exposed to various aspects of nature.

"We try to have a balance of indoor activities and lectures on the field," said UPM lecturer Tengku Hanidza Tengku Ismail. "Experiential learning is quite effective because you see, hear and talk about the issue."

And that's exactly what the envoys did. They scooped water from the well and waded into the sea with instruments such as the dissolved oxygen meter, pH

meter and turbidity meter to test various aspects such as oxygen content, acidity and clarity.

At night, they discussed their findings and tried to give explanations, even challenging each other on their ideas.

For example, when Universiti Sains Malaysia student Vigren V. Radha, 23, was asked how he would implement the water quality results in mechanical engineering, his area of study, he responded by using the dissolved oxygen findings.

"If the dissolved oxygen in seawater is low, we can pump air into the water using machine aeration to increase it."

On the morning of day three, the participants trekked up to the hill where the wind turbines and solar panels were situated.

The wind turbines on Perhentian Kecil island are the first in Malaysia and are part of a hybrid power generation system which comprises turbines, solar panels, diesel generators and battery.

"The wind turbines have a sensor to detect the wind, and they also have generators so when the blades spin, electric power is produced," Tenaga Nasional Bhd (TNB) fort finder Norman Shah Ngah told the envoys as he pointed out parts of the turbines, like nacelle and rotor.

He claimed the hybrid system, taken from Japan and Italy, was the first in Asia; even if there was no wind or sunlight, electricity could still be produced by the diesel generators and battery.

Kampung Perhentian Kecil on the island depends on the power these turbines produce, which can reach 11,000 volts.

Later in the day, the envoys trawled Long Beach, interviewing tourists and surveying rubbish strewn along the beach to analyse the island's waste management practices.

"The feedback from tourists was generally bad, they complained about cleanliness and rubbish on the beach," said Universiti Malaysia Terengganu student Ung Poh Lynn, 23. "We weren't surprised as we found cigarette butts, plastic bags and polystyrene on the beach."

By nightfall, however, the worries of

waste disposal were forgotten temporarily as it was time for *candat sotong* (squid catching)!

Spirits were high as the fishing boats headed out to sea and the students threw in fishing lines and tugged repeatedly, in hopes of snagging a squid.

Some were lucky, but within an hour, most of them ended up looking like 'squids' themselves, sitting or lying on the deck, trying to fight the nausea caused by the large waves.

"I vomited three times, but it's worth it," said Universiti Teknologi Malaysia student Shee Siew Wah, 24. "I *candat* a bit, threw up, then *candat* again!"

Snorkelling the next day was a much

more pleasant experience for most, as they spotted many corals and fishes, and had schools of fish nibbling bread from their fingers.

"I enjoyed snorkelling the most," declared UPM student Akmal Azfar Abd Mutalib, 19, at the end of the camp. "I want to come back next year to acquire a scuba diving licence."

The envoys also picked up lessons on animal protection when they spotted turtle tracks on Turtle Beach, the nesting site of Hawksbill turtles, and as their boats passed a cave of swallow nests.

## Sharing knowledge

Not only did the white sand and clear blue waters serve as a pleasant backdrop to contemplate heavy issues, they also drove home a point – pollute our world and you will lose all that. Through the discussions, however, the issue of how to balance economic development and preserving nature came up.

"You can't put a monetary value on something intangible like aesthetics. How do you measure the beauty of clear water?" asked UPM lecturer Rosta Harun during her workshop on environmental issues and management.

Assoc Prof Mohd Kamil Yusoff, speaking about water quality, urged the participants to consider various factors before developing land, if they were to become engineers.

"Before you develop land, you have to understand the linkages between atmosphere, soil, water and humans," he said. "To have continuous water supply, you

need to have the forests, as it is a water generator."

Assoc Prof Mohd Kamil pointed out the effects of development – sediment, chemicals and rubbish being dumped into rivers.

He explained that water is classified from 1 to 5. An example of Class 1 water would be that from the cleanest stream up in the hills. And Class 5 water would be that from Sungai Klang, in the heart of the Federal Territory.

He informed the envoys that what we get from the tap is Class 3 water that has

been heavily treated, and is "on par with drinking water for cows and goats".

"If we destroy the environment, we destroy ourselves along with it," added Rosta. There were interesting discussions and debates at night on the causes of pollution and what could be done to combat the waste problem.

"There is no centralised system to treat wastewater on the island," observed Monash University student Khatijah Kalilur Rahman, 24, who added that rubbish on the island was floated out to sea on platforms, to be collected by the mainland authorities.

From interviews with locals and resort operators, the envoys found that mainland boats were inconsistent when it came to collection and some rubbish would end up in the sea, and eventually harm the coral reefs.

"Some locals complain that the government is not helpful, but they themselves don't practise recycling much – there are no recycling bins around," Khatijah Kalilur said.

Chan Sze Meun, from Universiti Malaya, felt there should be law enforcement on the part of the local authorities. But the UPM lecturers pointed out that residents should think of better ways to dispose their rubbish. They even had the opportunity to suggest to a resort operator ways to turn food waste into compost.

Tengku Hanidza observed that this year's camp was different from those held in Kuala Gula, Perak and Taman Negara, Pahang, in 2006 and 2007, respectively.

"We decided this time we wanted a marine environment because the past two camps were held inland," she says.

"We did more things since we got the opportunity to visit the wind turbines and solar panels. There were new and alternative technologies involved."

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### **The final two**

After lots of learning and laughter, the time came for the finalists to present their ideas on how they would personally embark on environmental conservation.

The envoys were kept in suspense, till the award dinner, as to who would be going to Germany.

In the end, Vigren and Chan impressed the judges with their ideas of conducting a competition to design eco-friendly cars and implementing recycling of lunch containers in the workplace, respectively.

Speaking at the award ceremony on behalf of the Natural Resources and Environment Minister, the deputy, Datuk Maznah Mazlan, urged the envoys to tackle climate change.

"I am convinced that young people have a key role to play," she said. "This programme is a critical step towards inculcating a culture of environmental concern among them."

However, the journey didn't end there. As Bayer Co (M) Sdn Bhd managing director Christoph Bremen said: "We hope by giving our two BYEEs the opportunity to visit our headquarters in Germany and network with their international counterparts there, they will return to Malaysia with a broader perspective on sustainability and lots of entrepreneurial ideas and projects!"

The BYEE programme in Malaysia is organised by Bayer in partnership with United Nations Environment Programme (UNEP) and UPM.



Universiti Putra Malaysia's Assoc Prof Mohd Kamil Yusoff (right) teaching the Bayer Young Environmental Envoys (BYEEs) how to use certain instruments to measure water quality.

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The BYEES and their instructors snorkelling and having fun with the fishes in Pulau Perhentian.



Khatijah Khalilur Rahman and Tan Zhuankeng presenting their findings and suggestions on environmental protection.



Camp participants using certain instruments to measure the quality of sea water.

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The BYEEs find out how wind turbines generate electricity for the Perhentian island.

## Raising awareness

BAYER Group, a global enterprise, has been adopting environment-friendly practices since the 1990s. In 1995, Bayer started the Young Environmental Envoy Project in Thailand. It has since expanded and become the BYEE programme, under which youths from four continents are selected annually to visit the Bayer headquarters in Germany.

During the week-long trip, participants will get to visit the federal environmental protection agency and municipal waste management facilities, and observe the company's practices.

"We believe young people are future leaders," says Bayer Co (M) Sdn Bhd project leader Ho Mei Choo. "The environment is at stake now, but these students with a passion can give back to the environment."

Every year in Malaysia, students aged between 18 and 24 will go through a selection process to be part of the programme.

After submitting an essay on an environmental problem and how they can solve it, the applicants are interviewed by a panel of judges.

Those who qualify for the final round will attend a BYEE Eco-Camp for free.

At the end of the camp, the finalists have to present their ideas on promoting environmental protection. Two winners are then chosen to represent Malaysia in Germany.

"We keep in touch with the envoys after they return," said Ho. "If they need funds for their proposed environmental projects, we will sponsor them."

In 1997, the United Nations Environment Programme (UNEP) Regional Office for Asia Pacific placed the BYEE project under its umbrella, and has been working closely with Bayer since.