

Commentary

Sharing the benefits of nature

Exploring Sustainable Development

with Dr Goh Chun Sheng

EARLIER this month, we visited the National Science Centre in Damansara. The children were amazed by the exhibition, especially the section that displayed biological sciences, asking questions about cells, genes, and biodiversity. Against the wall, there was also a video projection showing flora and fauna in Sabah and Sarawak.

One thing that I always find fascinating about Borneo is its astonishing variety of biological entities.

People have been exploring and benefiting from numerous natural products, including nutrients to stay healthy, fibres for shelter and clothing, and medicines to cure illness. Technological advances may allow the identification of useful bioactive compounds that were not known in the past, driving breakthroughs in biological sciences and leading to new products like medicines, 'future foods', and many more. Potentially, these discoveries may create new livelihood opportunities for the local communities.

Such a nature-based bio-economy is a compelling and interesting discourse for Borneo. It has strong social relevance as it covers multiple elements, from traditional knowledge to frontier science surrounding nature, culture, and development concerns.

Commercialising local biological resources and associated traditional knowledge, or so-called 'bioprospecting', could be economically rewarding for local communities when

safeguarded with measures like intellectual property rights. In Africa, it was estimated that tens of thousands of species might be potentially utilised for industrial purposes. Bioprospecting can be done carefully with biotechnological tools to ensure that the extraction of these materials will not affect the ecosystems.

At the time of writing, the progress in Borneo generally remains at an early stage, with Sarawak as an exception. As early as 1997, the state government set up the Sarawak Biodiversity Centre (SBC) to manage, and some years later began to seek new commercialisation opportunities for the sustainable use of biodiversity, especially from local plant and microbial extracts, in conjunction with the Sarawak Biodiversity Centre Ordinance 1997.

Since then, the centre has been actively contributing to discovering, refining, and marketing nature-based products in Sarawak. I was lucky enough to have a chance to visit the centre some seven years ago and was highly impressed by the very well-organised, world-class laboratories.

One important task given to the centre is documenting the fast-disappearing traditional knowledge of indigenous communities on utilising natural biological resources. Importantly, the centre holds a policy of benefit sharing with indigenous communities in recognising their rights and sharing monetary and non-monetary benefits in utilising local biological resources and associated traditional knowledge.

The LitSara® project is a remarkable example of benefit sharing through the documentation and commercialisation of biological resources and traditional knowledge. The project was mainly funded by United Nations Development Programme (UNDP) and Global Environmental Facilities (GEF).



Distillation of AdenoSara®, a spicy scent essential oil by the Bidayuh of Kampung Semadang, Padawan and Iban of Rumah Simon, Lubok Antu. — Photo courtesy of Sarawak Biodiversity Centre

The region in focus in this project is the Kelabit-Maligan Highlands, connected to the Krayan Highlands we discussed earlier this month. The highlands are the headwaters of several rivers and are home to diverse flora and fauna.

Blessed with serenity and enigmatic views, the highland plateau of over 1,000 metres has been famous to tourists. The pictures of paddy fields peppered with traditional settlements in rolling valleys, together with the remoteness and cross-border elements, trigger people's vivid imagination about Sarawak's interior.

While highlands rice has been the trademark, there is more to offer. SBC has identified and documented a type of essential oil extracted from a tree wildly grown here, namely Litsea cubeba. The tree oil derived from the berry-like fruits and leaves emanates a sparkling scent evocative of citronella or lemongrass. To many, it has a calming effect by eliciting an

innate and deep connection with nature.

Traditionally, the communities in the Kelabit villages have long been using the plant for culinary and healing purposes. Besides using it as a cooking ingredient, the people simply pluck and crush a few leaves, rubbing them over their bodies as an insect repellent.

The mountain dwellers have close relationships with flora and fauna in the place they lived for generations. The tree has several names for different tribes: 'Pahkak' to the Bidayuh and 'Tenem' to the Kelabit and Lun Bawang.

Interestingly, the oil extracted from the tree had a unique composition compared to its counterparts elsewhere. With the continuous, decade-long efforts from SBC, the oil was proven to be suitable as an active ingredient in various personal care products. The trademark of 'LitSara®' was created to market the products and promote the healing features. It has now

gained attention from corporate and was distributed through a famous hotel that promotes sustainable products.

There are other ongoing efforts in SBC's Traditional Knowledge (TK) Documentation Programme.

One is the essential oil from Adenosma sp, an herbaceous plant grown by the Bidayuh people, which functions as a natural repellent for lice and ticks. Another example is Dragon's Blood, a kind of bright red resin extracted from a rattan species called *Daemonorops* sp (also known as 'Wi Jerenang'), that can be used as a dye and also medicine.

Similar research efforts were also noticed in Kalimantan, including surveying the medicinal uses of various plants and mapping and archiving the information in the format of an ethno botany database. However, these are not as organised and formalised as in Sarawak.

What is worth highlighting is the centre's partnership with

indigenous communities, upholding the Access and Benefit Sharing concept. The concept prioritises the participation of indigenous communities, ensuring fair and equitable access to biological resources and sharing of benefits from commercialisation.

On the one hand, cross-pollination happens when science meets traditional knowledge, generating new insights and knowledge shared between the scientists and the communities. On the other hand, the communities involved also enjoy a fair share of profits generated once the products are commercialised.

The LitSara® model demonstrates that the use of biological resources can be aligned with the rights and interests of indigenous communities. It proves that it is possible to mainstream conservation, biological sciences, and traditional knowledge all together by creating sustainable livelihood opportunities from innovative uses of local biological resources.

The keyword here is probably 'sharing', which was missing in many large-scale development projects throughout Borneo. It is not only about the valuable insights of indigenous communities into the biological resources but also the identification and connection with nature.

The living heritage provides meaning in everyday life. Rather than struggling with identity confusion, as discussed in previous articles, perhaps, an intuitive sense of belonging can be forged for everyone by sharing the benefits of nature.

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He is interested in exploring sustainable development in both Malaysian and Indonesian Borneo.

Constant danger: Life after leprosy, a long neglected disease

PARIS: Dan Izzett has lived with leprosy's effects on his body for 70 years, and has lost most to what he calls an "ancient, fascinating, very unkind disease".

The Zimbabwean former civil engineering technician and pastor was diagnosed at the age of 25 in 1972, but first contracted the disease when he was just five.

That long incubation period gave the bacteria that causes leprosy, *Mycobacterium leprae*, lots of time to spread through his body.

His right leg was amputated in 1980 in Zimbabwe's capital Harare. Now 75, Izzett has no feeling above his elbows, below his knees or in 70 per cent of his face.

That lack of feeling poses a constant danger, Izzett told AFP in a phone call from his home in southwest England.

"In October 2020, I put my hands on a hot plate and hadn't noticed it until I could smell my flesh burning," he said, leading to the amputation of the middle finger of his right hand.

The following year, the little toe on his left foot was amputated. Last month, he lost another toe. Izzett said he chose to speak

Indonesian leprosy survivor crafts new limbs for shunned villagers

TANGERANG, Indonesia: When Ali Saga visited a clinic in Jakarta four decades ago, he watched as patients and health workers scrambled to get away from him.

"The doctor suddenly shouted at the patients, 'Stand back! This person is a leper!' The 57-year-old said, recalling one of the most devastating moments after his diagnosis in the 1970s.

"They also roughly used a syringe to test my skin and I cried. My skin might not feel anything but my soul was hurt," the former leprosy patient added, choking back tears.

Now he is using his pain to help other residents of a village on the outskirts of the Indonesian capital live a normal life after leprosy with hand-crafted prosthetic limbs.

After Brazil and India, Indonesia has the world's third-highest cases of leprosy — a contagious bacterial disease transmitted by prolonged close contact with untreated cases.

Ahead of World Leprosy Day yesterday, the health ministry said the country still has over 15,000 active cases, with more than 11,000 new cases recorded last year.

The ancient disease, which causes disabilities and loss of



Former leprosy patient Ali Saga makes prosthetic legs and hands inside his workshop in Tangerang to help people with disabilities to have access to artificial limbs at affordable prices. — AFP photos

cold shoulder, sculpting artificial limbs that have been improving residents' lives since 2005.

One of the neighbours to receive Saga's creations is 70-year-old tailor Cun San, who had a leg amputated in his teens and lost another in 2007.

"I once thought I would never be able to walk again... but now I am so grateful I can walk

for years he wore a fake bamboo stump because he could not afford a prosthetic limb.

"It was painful and I still had to use a walking stick to steady myself when I walked," said Jamingun, who like many Indonesians goes by one name.

But his life changed after receiving a prosthetic leg for free that Saga had made through

