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# Man-made marvel of a green lung

Nature is a miracle worker but man is equipped to copy what it does, and the results are almost equally spectacular. A good example is the Forest Research Institute Malaysia. This lush expanse of greenery offers a popular hiking trail, serves as an education centre on environmental conservation and is a sanctuary for several threatened bird species



BY PAULINE WONG



PHOTOS BY DD HOE

**D**EFORESTATION is a serious matter, and for decades now it has been the focus of conversations about the environment. It is the same in Malaysia, where we have lost large tracts of forests and we now need to recover those lost grounds.

While our country is still blessed with a large forest cover – 60% of the country's total land area – deforestation remains a major concern as the country is still developing. Development poses a major threat to forests.

According to the World Wide Fund for Nature (WWF) Malaysia, from 1983 to 2003, forest cover in Malaysia was reduced by about 4.9 million hectares. This is about four times the size of Singapore. This also means that an average of 250,000ha (2,500 sq km) of forest has been lost every year since 1983.

A study of Google satellite images by the University of Maryland in the United States shows that Malaysia is one of 15 countries that experience the world's highest rates of forest loss. Between 2010 and 2012, the country lost 14.4% – or 47,278 sq km – of its forest cover in 2000.

What is left of Malaysia's forests

continues to be under threat. According to WWF Malaysia, the perils faced by the country's forests include unsustainable logging, illegal removal of forest products and encroachment.

## Crown jewel of Malaysia's forest

Unknown to many, there is a large tract of jungle just outside Kuala Lumpur. This is a man-made 1,500 acre (607ha) forested land that has been tended with care by the Forest Research Institute Malaysia (FRIM) since 1925. It is Malaysia's best kept secret.

The once barren former plantation and tin mining land is now a lush and fertile secondary jungle, thanks to the hundreds of people who have worked tirelessly to cover the landscape with trees and other plants in the past 89 years. In fact, every tree that now grows in this jungle has been planted by man.

There is not a single tree older than 100 years, but everything about it – from the warm and balmy air under the towering trees to the faraway yet distinct chirping of birds and buzz of insects – makes the place feel like a really old forest.

FRIM's efforts in recreating this forested area is eloquently summed up in this simple message by Dr Noor Azlin Yahya: "Humanity may have destroyed the environment, but they can also save it." She is the head of the Ecotourism and Urban Forestry Programme at FRIM's Forestry and Environment Division.

## The history of FRIM

In a rather unusual turn of events, the area in which FRIM now stands

was once a natural forest. The forest, located near Kepong, was stripped bare for vegetable farming and mining. These agricultural and mining activities continued until 1925 when the British colonial administration gave the green light for a forest research institute to be built in the area.

A year later, Dr F.W. Foxworthy, the country's first forest research officer, began setting up a forest nursery and an experimental plantation on a large scale. Starting with nursed plants, there was, of course, the problem of the land being infertile after years of farming and mining.

Among the first species of trees to be planted in the area were those of the nitrogen-fixing legume variety. Noor Azlin says

these trees have the capability of returning the soil to a level of fertility that would enable it to support thousands of species of trees. Between 1927 and 1930, a total of 372,471 trees were planted.

By 1929, the institute's main office building that would house the laboratories, the library, herbarium and museum, as well as quarters for personnel, had been completed and occupied. The main office building (now the Administration Building) was built in 1951, in the colonial style.

The institute's nursery – the "first stop" for

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species introduced from the wild and grown under observation before being recommended for field planting – was established in 1929.

The buildings have not only stood the test of time, but have also withstood the challenges of a war. Perhaps in recognition of the importance of the study of nature, the Japanese used Dr Foxworthy's nursery and experimental plantation as their Ringyo Shikenjyo, or Forestry Experimental Station, during their occupation of Malaya from 1942 to 1945.

On Oct 1, 1985, the institute officially became autonomous under the Malaysian Forestry Research and Development Board Act. It was then renamed Forest Research Institute Malaysia. Tan Sri Dr Salleh Mohd Nor was appointed its first director-general and one of FRIM's nature trails has been named after him.

### Man-made marvel

Today, FRIM is home to 2,276 species of trees (including ornamental plants). Old tin mining pools have been converted into ponds, and all over, including along the few stretches of tarred road on its grounds, precious mahogany trees can be seen.

Aside from the various nature trails (a hike along one of these trails can take 45 minutes to an hour), FRIM is a treasure trove of rippling rivers and artificial waterfalls. There is also a canopy walkway, which was built in 1992, and it spans 150m and is suspended between trees at approximately 30m above ground level, where visitors can take in a panoramic view of the forest and parts of Kuala Lumpur from a distance.

One major attraction in FRIM is a phenomenon called "crown shyness", named so because the tops (crowns) of the Camphor trees (*pokok kapur*) seem to shy away from each other, forming a mosaic-like pattern which is best seen through the high afternoon sun. This phenomenon is found only in two places in the world; here in FRIM and in Irian Jaya in Indonesia.

FRIM is also home to about 200 species of birds, including the

straw-headed bulbul, a globally-threatened species. There are 34 species of frogs and toads, and 94 reptile species – yes, that includes some pretty poisonous snakes – not to mention the hundreds of species of insects and some mammals you don't see at most zoos, such as the slow loris, the Malayan flying lemur and the dusky-leaf monkey.

The fact that FRIM is located close to the Bukit Lagong forest reserve has also served to enrich the fauna in the institute's own forest despite it being man-made. Noor Azlin sees it as a stroke of good luck.

She is also passionate about keeping the forest alive. "Even if you keep on planting new forests, the biodiversity is lost if you also cut down existing forests. We need

to keep existing forests as well. There are many species of animals that sometimes travel downstream from Bukit Lagong forest."

Noor Azlin, who has worked with FRIM for more than 20 years, recalls that while there are all kinds of frogs, snakes and mammals, they have yet to spot the elusive big cat – the tiger.

"But we suspect we may have a leopard in our midst, because sometimes we find durians opened very neatly. Usually, if it is a monkey, the fruit will be opened messily," she says, adding that in the old days, security guards swore they heard the roar of tigers.

"Once, a security guard used to say he couldn't sleep because he heard tigers roaring, to which I said 'as a guard you shouldn't be sleeping anyway,'" she jokes.

One of her most memorable sightings was the scene of two fighting snakes – a python and a cobra – tangled up in a deadly embrace. However, she did not stay around long enough to see which snake was victorious.

Noor Azlin claims that while the forest may be man-made, with proper nurturing, something almost magical can happen.

"It is all man-made, but if we nurture it long enough we will have this beautiful biologically diverse forest.

This is where our strength is."

### The work of FRIM

FRIM, now something of a green lung for the city, has evolved into an urban jungle – not the concrete kind but one that has a far more important impact than meets the eye.

For one, a single tree absorbs 48 pounds (21kg) of carbon dioxide per year, while providing enough oxygen for two persons per day. By the time the tree is 40 years old, it would have taken one tonne of carbon dioxide away from our air.

But if that isn't quite enough to convince you, having a green lung means reduction of noise and air pollution, absorption of inorganic and organic gasses like ozone gasses, and not to mention aiding in cleaning the air that we breathe of particulates like sand, dust, ash, pollen and smoke.

Perhaps it does not sound exciting when put that way, but this is just the tip of the iceberg in the importance of urban forests. This is why FRIM regularly conducts and encourages conservation programmes, especially among school-going children, who flock to the campsites in FRIM on weekends to learn about Mother Nature.

It also conducts wetlands conservation programmes at its mining pool-turned-wetlands (the Sebasah trail) and even houses an arboreta, which serves as a reference and education centre for the study of forestry.

FRIM, says Noor Azlin, has to date replicated this man-made forest model in several places, including the Kuala Lumpur International Airport (KLIA) and Johor Baru, where 25 out of 84 hectares in the Mutiara Rini Park would be set aside for a similar concept.

For her, growing a man-made forest is not an impossible task. "Human beings can develop something from nothing (like FRIM), and it can be something so beautiful. We can make this change."

With ever-shrinking forest areas, the need to replant our trees has become of utmost importance for everyone, and not just something for tree-huggers to watch out for. ■■■

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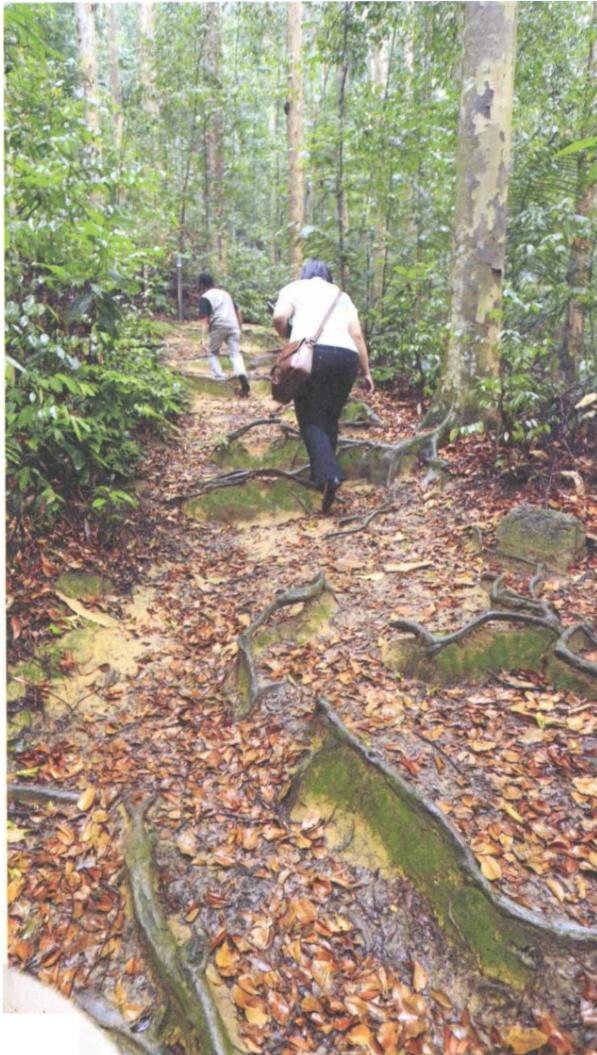
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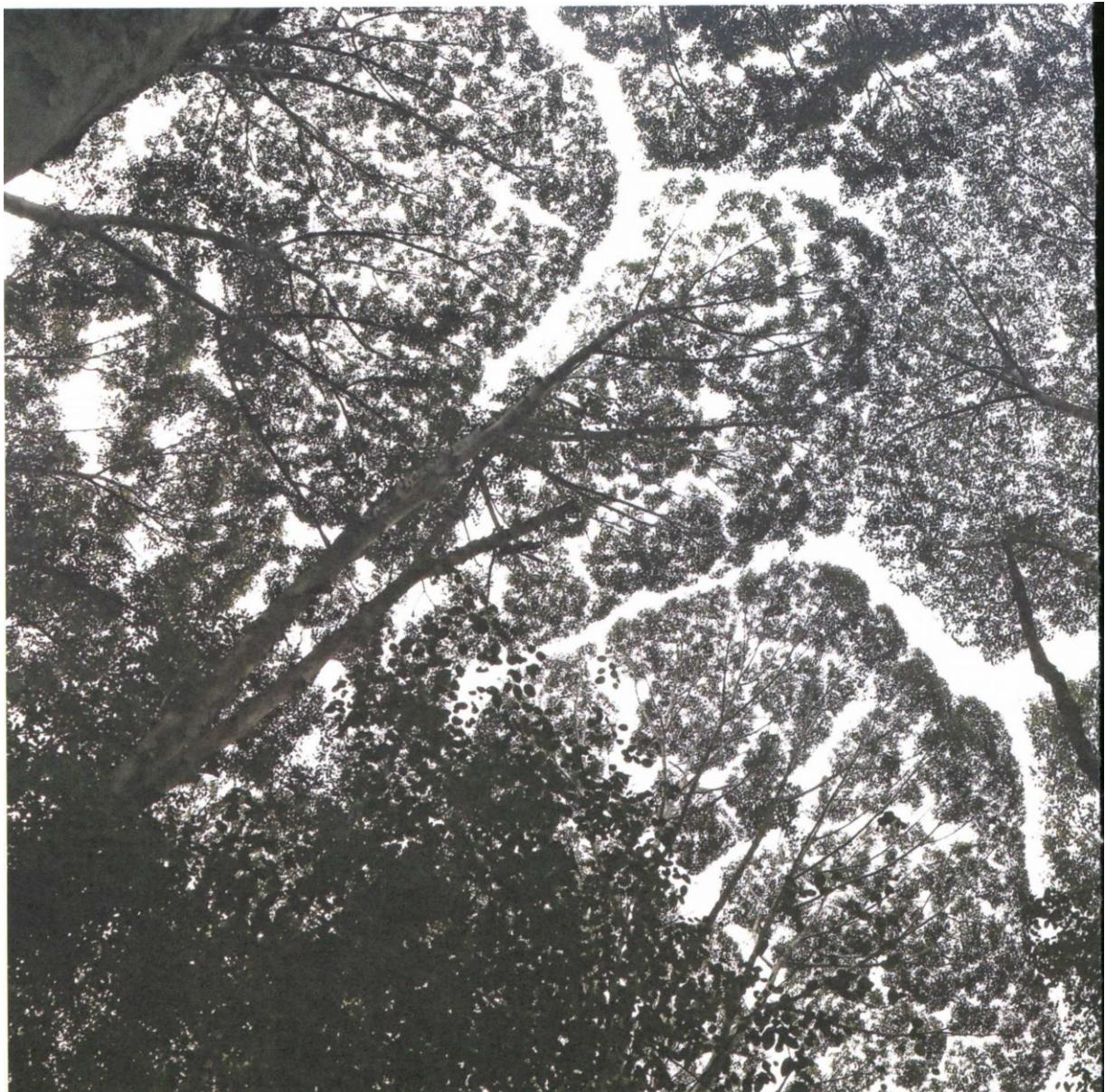
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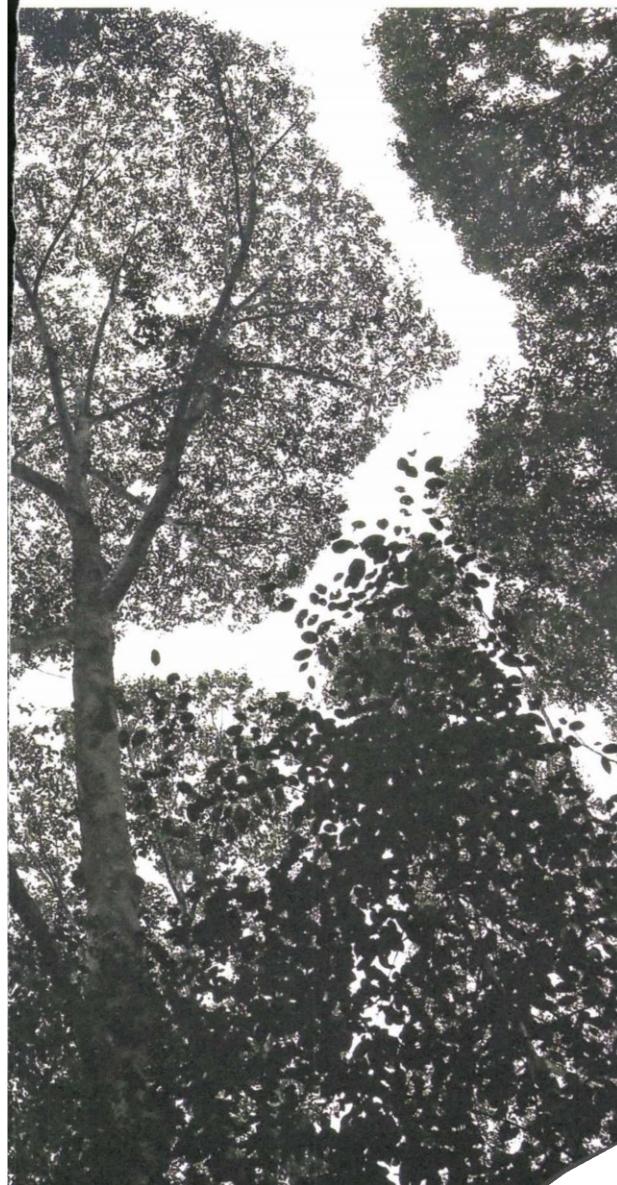
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