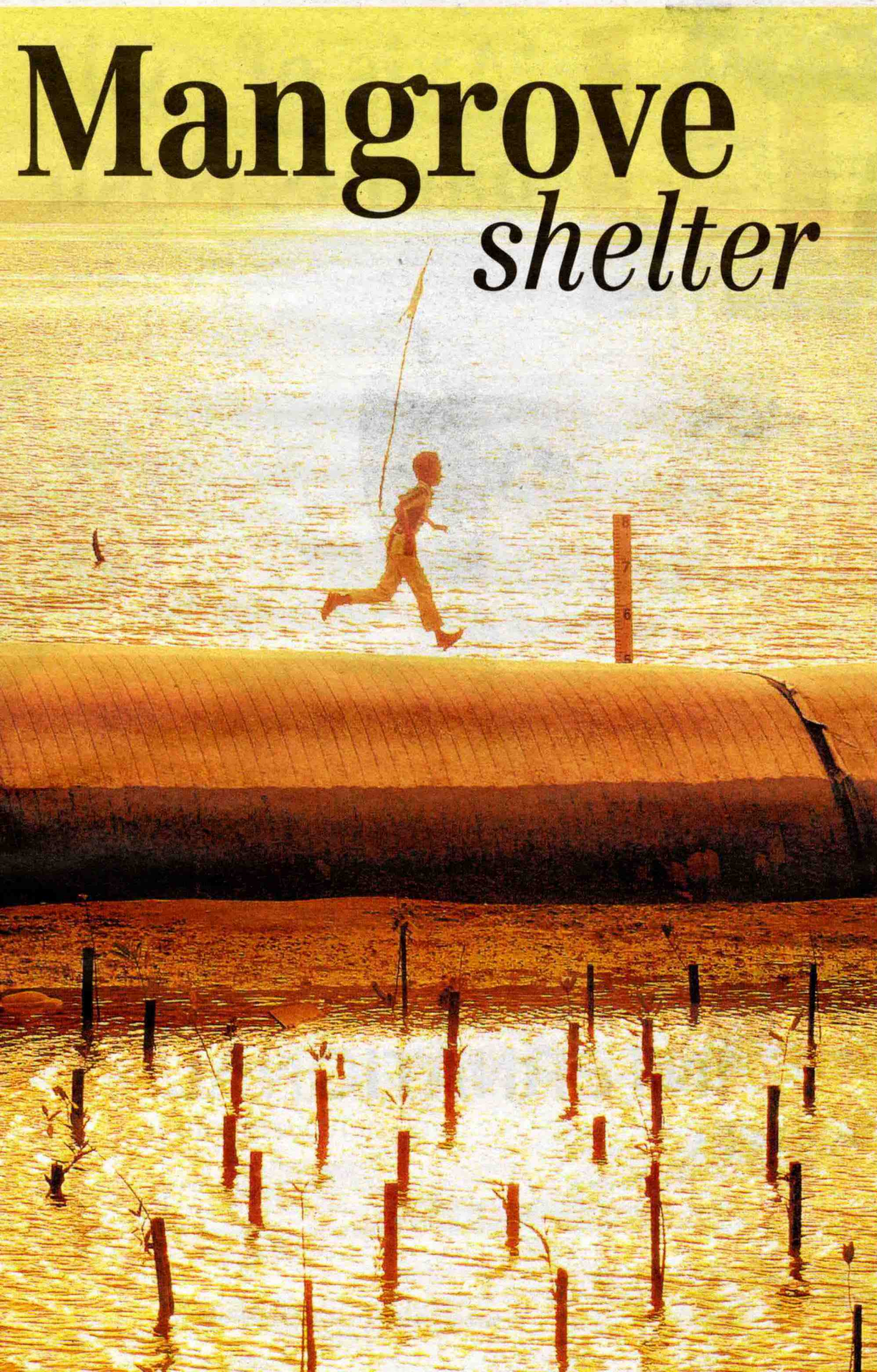


# Mangrove *shelter*



**S**TANDING on the edge of a rickety wooden jetty, the jolly-faced local pointed to a pole sticking out from the rolling sea some 1.5km away.

"That's where my house was. That's where I grew up."

Over four decades, Chai Bak Long watched the sea waves eat aggressively into the mangroves which shielded his fishing village, forcing its residents to move further and further inshore.

The fish, large crabs, frogs and birds that lived there rapidly dwindled in size and number, affecting the livelihoods of local fishermen.

Today, a giant sausage-like tube snakes across the sea floor. It's called a geotube. About the diameter of a hawker-stall umbrella and nearly as long as five Olympic-sized swimming pools, it represents the great, green dreams of contractors Perwira Bintang Holding Sdn Bhd.

The tube, which the company named Pillowtube, was designed to absorb the relentless thrashing of waves, giving the fragile mangrove saplings within a fighting chance to grow their roots. Occasional breaks in the tube allowed fresh sea water to slosh in and out.

At the same time, the tube prevented seedlings from being washed out to sea.

"It looks like a sausage, but it's a very special sausage," said Perwira Bintang CEO Datuk Tan Kar Meng, who himself grew up among the mangroves of Sungai Besar, Sabak Bernam.

The nearly RM1 million pilot project, funded by Selangor Forestry Department, was completed in October.

As of last week, Tan said 80 per cent of about 1,800 saplings planted still survived, and thousands of wild ones were growing under the mother trees. This, he said, made it a resounding success.

years, she added.

"It takes at least three to four years before we can say the project is successful. Mangroves are so sensitive, things can change in the blink of an eye."

She was also concerned that the Pillowtube makers didn't involve experts in the field like botanists, sedimentologists and coastal ecologists.

She said that although the company had engineers to construct the geotube, they didn't have the expertise to deal with issues like salinity, soil analysis, hydrology and natural pests.

"It's like making a car. Just because you know how to make the tyres doesn't mean you should get the contract to build the whole car," said Prof Noraini, who sits on a task force set up under the Natural Resources and Environment Ministry to oversee mangrove and coastal species replanting operations.

Selangor Forestry Department director Nik Mohd Shah Nik Mustafa said the company was given the contract because they were



It takes more than good intentions to put the groove back into mangroves, writes **JESSICA LIM.**

**MANGROVE LOSS IN MALAYSIA BETWEEN 1973 AND 2004**

State	Hectares	%
Sarawak	45,000	26
Sabah	20,000	5
Johor	16,700	2
Selangor	15,000	47
Perak	13,500	24
Negri Sembilan	2,700	77
Penang	2,500	64
Kedah	2,050	20
Terengganu	1,000	29
Pahang	500	14
Perlis	220	88
Malacca	200	67
Kelantan	150	50

Source: Maritime Institute of Malaysia



Chai reminisces about his childhood, when he used to catch crabs in the mangrove area and sell them for pocket money.

well-established and had the relevant expertise in construction. "They can engage other experts if they want to. That is up to them," he said. But he said that as far as he could see, the mangroves were growing well and he was satisfied with the project.

**Money well spent?**

"RM1 million, huh, for 250 metres of geotube," mused Maritime Institute of Malaysia (MIMA) senior researcher Tan Kim Hooi.

About 15 per cent of our 4,800km coastline is lined with mangroves, he pointed out, and a third of the coastline is facing erosion. One estimate put a RM250,000 price tag on every 100 metres of tubing.

That is a lot of eroded coast to line with those frightfully expensive tubes. He said that to consider geotubes as a major solution for coastal erosion and protection would be largely ineffective.

"It's a dynamic process. You gain some, you lose some. If the conditions are right, nature repairs itself," he said, adding that geotubes had not been tested against rising sea levels.

"Most mangrove plantings along exposed coastlines have failed. To answer why, we have to determine the reason they were dying out in the first place," said Tan.

He said the heroic efforts to plant mangroves often came to naught because well-meaning parties used the wrong species at the wrong areas.

"You won't believe it. People can look at a mangrove forest, see mother trees of one species, and plant trees from a different species.

"Just because a species like as *Rhizophora apiculata* grows well in

Matang mangroves doesn't mean it will grow well along exposed coastlines. Even if those trees survive, they will probably be stunted," he said.

Mangroves died out in coasts with high-energy waves, he said, because they simply liked it better in more sheltered areas. Thus, he said that the idea of growing mangroves in open coastal areas as protection against tsunamis could be misleading.

"It's better to invest on an early warning system for tsunamis. Encourage mangrove rehabilitation, yes, but in areas where they can thrive naturally."

He also suggested that active replanting in abandoned shrimp ponds would be more viable and cost effective.

But most importantly, he said that yet-unprotected mangrove forests (about 100,000 hectares) should be gazetted, and real steps taken to control development in mangrove areas.

"What's the point of trying so hard to plant new mangroves when you're not doing enough to protect existing ones?"

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**Tan explains how the Pillowtube absorbs the waves' energy so that young samplings have a chance to grow.**

