

WATER revives a dead river

Sungai Way rehabilitation involves creating a river within a river

Success depended on engaging stakeholders from the start

By Stephen Ng

For Dr K Kalithasan of the Global Environment Centre in Malaysia, river rehabilitation works best when you go back to the basics of engaging the community and employ methods that are practical, sustainable and duplicable. After three years of working to rehabilitate Sungai Way, one of Malaysia's most polluted rivers, his team showed that simple technology is sufficient to help bring life back to a river.

"What is important is our model remains low-cost," he explains. "The model has to benefit the local communities socially, environmentally and economically."

The 12-km tributary of the better-known Sungai Penchala runs through residential, commercial and industrial areas in the city of Petaling Jaya in Malaysia. The project, sponsored by GAB Foundation, a non-profit organisation in Malaysia, cost some US\$250,000, but the good news is the once "dead" river is now alive.

Squatters part of problem

Due to rapid development in the area, Sungai Way was concrete-channelised, leaving it looking more like a drain during the dry season. The river is a good flood mitigator during the monsoon season, but most of the time, the bulk of its water comes from the surrounding developments.

Before the rehabilitation, one could hardly find living organisms in the river except for bloodworms. Being fully concrete, there was no natural riverbank for aquatic plants to grow. There were also few rocks and boulders in the river to serve as refuge for fish and invertebrates.

Part of the problem was that squatters were dumping waste into the river. Water quality index tests carried out on three sampling stations in May 2009 put it under Class V, which indicates a heavily polluted river under

the National Classification Standards.

According to Kalithasan, who was the consultant and coordinator for the project, the further downstream the river, the worse was its water quality. "This is due to the accumulation of wastewater and all sorts of solid waste discharged into the river," he says. "Even today, the water quality in Sungai Way is highly influenced by industrial, residential and commercial effluents."



Photograph showing residents building the wetland islands

River ownership

In 2007, GAB Foundation adopted the WATER project – an acronym for "Working Actively Through Education and Rehabilitation". Management committee member, Kelly Ch'ng, says the WATER project was aimed at improving the water quality of Sungai Way from Class IV–V to the III–IV range. "We have made it a point to inculcate river ownership among the communities to help reduce the pollution," she says. "People forget that rivers are 'living entities' and home to many freshwater species. Hence, on May 23rd, 2009, we organised a river carnival for one of the residential areas, where some 500 people attended to celebrate and appreciate the river that gives life to this area."

At the carnival, there was emphasis on the Zero Waste Concept, teaching the residents how to minimise waste production, and maximise reusing and recycling waste effectively.

Kalithasan says the first step undertaken was to organise the working committee involving, among others, the Department of Irrigation & Drainage, Department of Environment, Petaling Jaya City Council, Selangor Water Management Authority and the Fisheries Department, as well as service providers such as solid waste management company **Alam Flora** and national sewerage company **IWK** and representatives of various residents' associations.

"It was important to engage with the stakeholders and project partners right from the beginning," says Kalithasan. "Thereafter, we moved on to draft the action plans for the entire project."

The Global Environment Centre (GEC) helped the working committee draft out the action plans, focusing on four areas – reducing pollution at source, enhancing water quality, improving biodiversity and spearheading community initiatives. Rubbish traps were set up along the river, and water quality was treated with the use of environmentally-friendly materials such as mud balls and effective microbes.

This is the first river rehabilitation project in Malaysia that uses wetland islands. Kalithasan says: "Because

the entire river is nothing but a concretised channel, our concept was to create a river within a river. This took at least three months to complete. It led us to step three of our project, which included creating seven wetland islands within the river, which helped to create ripples and pools. On the islands were planted wetland species capable of treating the water, such as *Typha* (cattail) and *Cyperus Involucratus*. This formed part of the ecosystem, which is capable of improving the quality of water. Before long, insects such as the dragonfly started to come back, fish now swim here and birds are being spotted. The river has indeed come back to life."

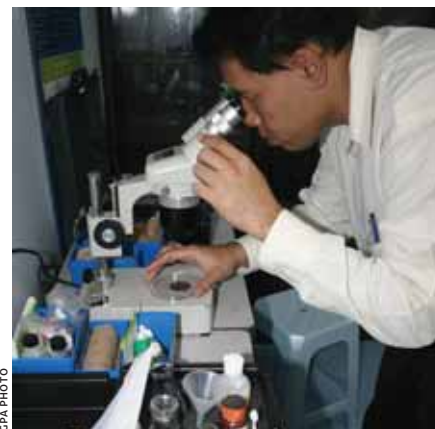
Above all, he says, river rehabilitation must involve the stakeholders and the communities through which the river flows. "Education is pivotal," says Kalithasan. Companies running businesses along the Sungai Way basin were given a better understanding




Dr K Kalithasan explaining how the WATER project has been successful in the past three years

of the river rehabilitation project at a seminar presented by GAB Foundation and GEC.

The project encouraged the local communities to practise the 3Rs – reduce, recycle and reuse. "Most of the people living here are aware now about the river rehabilitation work, and they



Azli Abu Bakar, senior programme officer of the Global Environment Centre

are starting their own initiatives," says Ch'ng. Some residents have turned used cooking oil collected from households into candles and soaps. "They make good door gifts that help them earn some additional income." The residents also make decorative items from shells and old newspapers. 

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