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Keeping a river clean

The Sepang river is cleaner than it used to be, but pollution concerns remain.

ONCE badly polluted, the Sepang Besar River is recovering. It's greenish-blue brackish water today supports a thriving mangrove forest. Yet, 20 years ago, it was as good as dead.

The locals nicknamed the waterway "Nipah River" then to reflect its putrid state. The name refers to the Nipah virus which took human lives and caused the culling of over a million infected pigs in 1998.

Large-scale pig farming in Negri Sembilan had led to discharges of polluting effluent into tributaries of the Sepang river, which sits on the boundary of Selangor and Negri Sembilan.

When the pigs were culled, the decomposing carcasses turned the river water black.

Today, the river appears normal again, thanks to its intertidal, self-cleansing nature. However, concerns remain over other pollution sources.

Universiti Putra Malaysia professor Dr Ahmad Ismail says both states must set aside river reserves and monitor pollutants, which include herbicides sprayed in oil palm plantations, effluent from shrimp ponds and surface run-offs.

A drive into the interior of Sepang brought some of these aquaculture farms into sight. The Sepang Land Office says these farms are legal and operate with consent from the Selangor Fisheries Biosecurity Centre.

Ahmad is familiar with the river, having conducted research there in the past. In a 1997 study, he found high amounts of copper, zinc and lead in river sediment collected near pig farms.

In a paper which he co-wrote, he said that pig farming contributed significantly to pollution and high copper levels. The pollution levels, however, dropped drastically near the river mouth. He concluded that between 60% and 70% of the heavy metals were from human activities.

The river is not just economically important for fisheries and ecotourism but for mangrove trees too, which grow in the estuary.

In a 2004 study, Ahmad found high levels of cadmium, copper, nickel, lead and zinc in the mangroves, mainly due to natural processes. Human-related pollution could have decreased over the years, enabling the mangroves to recover. Ahmad suggested that metal discharges be monitored for they threaten aquatic life.

On a recent river cruise with representatives from various agencies, Ahmad was surprised to see people fishing and no bad smells.

"However, the water quality can still be improved. More measures can be put in place to reduce pollutants and existing policies or guidelines have to be followed. If there aren't such guidelines in place, then they have to be established," he says.

Negeri Sembilan Department of Environment (DOE) director Ruslan Mohamad rules out the existence of pig farms in Negri Sembilan's side of the river, based on geographical information system monitoring.

He says factories in the Enstek Industrial Park located about 2km away do not discharge into the river but to Sungai Chinchang, and then to Sungai Labu that discharges into Sungai Semenyih in Selangor.

DOE director-general Datuk Halimah Hassan says there are 81 pig farms in the Kelanang subdistrict in Sepang, Selangor. She says although these are located within the Sepang Besar River basin, the farms discharge directly into the sea and not the river.

She says the river water quality has improved from "slightly polluted" to "clean" between 2010 and 2014.

However, the river is categorised as Class III in terms of organic pollutants (biochemical oxygen demand and ammoniacal nitrogen). She adds that committees have been formed to look at the pig-farming issue.

"Both state governments are looking into developing modern pig farming techniques, such as those with zero discharge, and establishing dedicated pig farming areas."

On the appropriate location for setting up factories or pig farms, Halimah says this is covered in the *Siting & Zoning of Industry and Residential Areas* guidelines published by the department in 2012. It states that pig farms should be at least 500m from the nearest residential area and located outside water catchment areas.

1 Fish farms will suffer if the river water quality deteriorates. **2 Clear flows:** The Sepang Besar River needs clean waters to nurture mangroves and wildlife such as this little heron. — Photos: MOHD SAHAR MISNI/The Star