



**Water woes:** Air Selangor workers using excavators to block the flow of water from the contaminated Sungai Buah into Sungai Semenyih last October. It took authorities a while to identify the contaminant in this incident, underlining the need for more advanced treatment technology that can deal with emerging pollutants. — Photos: Filepics

By VICTORIA BROWN  
star2@thestar.com.my

LAST year was not a particularly good one for the environment. Contaminated water, dry taps, wildlife seizures, and endangered species made the headlines in 2016.

Much to the ire of Malaysians, many households experienced water cuts multiple times, hence the continued concern over the country's water security and management well into 2017.

"Water disruptions in 2016 were the most reported in the media. It seems like it is happening more and more frequently," says water quality and modelling specialist Dr Zaki Zainudin.

"It is ironic because we actually made good strides in catchment management. However, we did recede on the water safety and security side," he concedes.

The authorities are currently looking into using the total maximum daily load (TMDL) system, the calculation of the maximum amount of a pollutant allowed to enter a body of water, but Dr Zaki expects that this initiative will take time to implement.

"In the long run, TMDL is the way to go. This is essentially the most effective way to manage pollution worldwide, so we are moving in the right direction," he says.

However, the big problem is illegal dumping and discharge. This is something Dr Zaki says the authorities must tackle "immediately".

"It causes disruptions because there is too much contamination. In the immediate future, we have to think about the safety and security of water for public consumption. That takes priority," he adds.

The issue is having water intake points in areas that are susceptible to pollution from various sources located upstream, says Dr Zaki.

There are several options to address the problem, the first of

# Hoping for a better year for the environment

Star 1/1/2017 Pg. 10 + 11

Better legislation, improved water resource management, and increased engagement with stakeholders ahead.

which is to have offsite river storage.

"By having offsite river storage, there is no need for direct intake from the river to the treatment plant.

"Instead, they will pump water out of the river when it's clean and store it at an offsite pond near the treatment plant," he says.

This is so that if the river is contaminated, we will still have a water supply.

"Selangor is currently implementing this through its hybrid off-river augmentation system (Horas)," says Dr Zaki.

"Horas is a step forward, but we have yet to see how sustainable it is," he adds.

## Upgrading treatment technology

Furthermore, Malaysia needs to consider upgrading its treatment plants to use more advanced technology to deal with contaminants. This advanced technology addresses a wider spectrum of contaminants, not just the conventional ones like ammonia.

"We need to be prepared for the emerging pollutants that are not part of our standards yet, the unknowns," says Dr Zaki, citing the contamination of Sungai Buah that caused the Sungai Semenyih water

treatment plant in Selangor to be shut down in October last year.

"The worrying incident was what happened in Sungai Buah because it took them a while to detect what the contaminant was," he says.

"With advanced treatment technology, you stand a good chance of dealing with these emerging pollutants without having to shut down the plant," he explains.

As catchment areas are increasingly becoming developed, this is especially important.

"The Langat catchment, which includes Semenyih, is a rapidly developing one. Pollution goes into the river and, as time progresses, the contamination level will continue to rise," says Dr Zaki.

He also says that it is imperative that water supply and treatment technology are "in synergy" with one another.

"You can have the cleanest river, but if someone was to dump pollution in it or sabotage it, the contamination and disruption will still happen," he warns.

## Preserving water quality

Finally, it is important to set targets to improve or maintain the water quality in stretches of river that are affected by development.

"The first step is to set water quality targets for specific river stretches based on beneficial uses," says Dr Zaki.

It makes sense to preserve specific stretches like areas further upstream where there are recreational activities, he argues.

"The long-term strategy is to reduce the amount of pollution, so that's having better quality pollution or lower quantity," he adds.

Industries may also need to adopt more advanced treatment technology to bring down their pollution levels.

Industries which cannot afford to treat their waste to very stringent levels can construct a pipe to discharge the waste further downstream where the river is "less sensitive", or even explore other management methods, such as effluent recovery, according to Dr Zaki.

## Integrated water resource management

The Government has also approved a RM50mil allocation under the 11th Malaysia Plan to complete the study of 25 integrated river basin management plans. The plans aim to improve water quality, reduce the risk of floods, protect the environment, and ensure there is enough water in any particular basin.

"With the completion of the study, any development in a particular basin will follow the recommendations of the study," says Natural Resources and Environment Minister Datuk Seri Dr Wan Junaidi Tuanku Jaafar.

The ministry is also in the midst of finalising the new Water Resources Act, which is expected to strengthen water resource management in Malaysia, says Dr Wan Junaidi.

He emphasises the need for cooperation between all stakeholders in managing the country's water, especially state governments, and stresses the importance of public awareness.

After all, the public also plays a role in the Government's plan to have better and cleaner rivers.

Dr Zaki agrees that the mindset of the public has to change.

"Polluters have to realise that we need their cooperation and understanding. They are, after all, contaminating their own water supply," he points out.

## On the brink of extinction

On another front, the illegal wildlife trade has been recognised as a global problem.

"More species are threatened by illegal, unsustainable wildlife trade now than ever before," says Dr





Megat Setia Megat Muda (left) and his son, Megat Hafizaudin Aiman, studying a sample of water from Kuantan's Sungai Nyior. Any stretch of river in developed areas is at risk of contamination.



A slow loris for sale – on an open Facebook group. While a crackdown on the illegal wildlife trade online is necessary, public awareness campaigns also need to be conducted.



Department of Wildlife and National Parks (Perhilitan) ranger Aiminuddin Rashid with one of the adult pangolins from the total of 97 seized by the department in Kedah last September.

Chris R. Shepherd, Traffic South-East Asia regional director. There are tarantulas found on some mountains in Malaysia that cannot be found anywhere else on Earth – and they are being dug up and sold to international buyers, says Dr Shepherd. Malaysian songbirds are being trapped and smuggled to Indonesia and Singapore for the caged-bird trade, while porcupines, civets and other small mammals are killed for meat at local restaurants. "The list goes on and on," says Dr Shepherd. "Sadly, many of the species threatened by the illegal trade are not even formally protected, which further illustrates the lack of awareness, information and concern needed to save them," he adds.

Asked if we are losing the battle against illegal wildlife traders, Dr Shepherd answers: "Yes, we are." "Go online and look at the number of traders selling Malaysia's wildlife – insects, spiders, civets, primates, songbirds, raptors, and more. "Many of these species are not fully protected, but should be," he says. And all tigers, including our Malayan tigers, are in "real trouble" if trafficking in them continues at its current rate. A 2016 Traffic and World Wide Fund for Nature report on tiger seizures finds no evidence of a decline in tiger trafficking across Asia.

Based on tiger seizures between 2000 and 2015, there were tiger parts equating to at least 1,755 tigers within the five-year period. "Not enough is being done in any country. Here in Malaysia, tiger poaching continues, threatening the survival of the already greatly depleted population," says Dr Shepherd. Malaysia's tigers are not only threatened by poaching but also by ongoing habitat fragmentation and loss, plus the depletion of prey species. "If things don't change, we are in real danger of losing tigers from the wild across Asia. "Losing tigers here in Malaysia would really be the ultimate conservation failure," he says.

**Combating wildlife crime** Thankfully, the illegal wildlife trade is finally being treated as a serious crime in an increasing number of countries. "People are recognising that so much more needs to be done to combat the scourge of organised crime profiting from wildlife. And that's great news," says Dr Shepherd. Efforts in Malaysia have also improved. "There is still a lot of work to be done, but things are moving in the right direction. "Malaysia has greatly increased its enforcement efforts over this past year (2016), and if this level of commitment continues, we will see



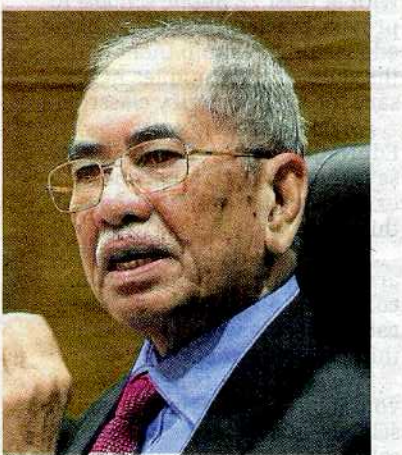
Department of Wildlife and National Parks (Perhilitan) director-general Abdul Kadir Hashim with a tiger skin seized in a raid on National Day last year.



Dr Zaki Zainudin: 'We need to be prepared for the emerging pollutants that are not part of our standards yet.'



Dr Chris Shepherd: 'More species are threatened by illegal, unsustainable wildlife trade now than ever before.'



Dr Wan Junaidi Tuanku Jaafar: 'We ... collaborate with the Malaysian Conservation Alliance for Tigers ... to increase the tiger population.'

very positive conservation impacts here," he adds. The Natural Resources and Environment Ministry also remains "highly committed" to curbing wildlife crimes. "The ministry will continuously coordinate cooperation among multiple stakeholders on the national, regional and international level to share information and provide assistance in combating illegal wildlife trade in Malaysia," says its minister Dr Wan Junaidi Tuanku Jaafar. According to him, this collaboration between different agencies is the key to successfully intercepting the activities of illegal wildlife traffickers. For instance, the 1Malaysia Biodiversity Enforcement Network was set up in 2014 to protect critical habitats such as the Royal Belum and Endau-Rompin state parks from illegal poaching. "This initiative was done in collaboration with the Malaysian Army, Forestry Department of Peninsular Malaysia and protected areas authorities," says Dr Wan Junaidi. "We also collaborate with the Malaysian Conservation Alliance for Tigers in our effort to increase the tiger population in Malaysia," he says. He adds that the current estima-

tion is that there are 240 to 350 tigers remaining in the wild. **More needs to be done** For 2017, illegal and unsustainable trade will remain the "most urgent threat" to many Malaysian species. "Sadly, the profit made by these greed-driven traders still outweighs the risks. This needs to be turned around – the risk should be a far greater deterrent," says Dr Shepherd. "There needs to be increased enforcement efforts targeting those that smuggle wildlife in and out of the country, higher conviction rates for wildlife crimes, and a real crackdown on the booming trade of wildlife via the Internet," he says, adding that public awareness campaigns should also be conducted. Dr Zaki, for his part, hopes to see a follow-up with the total maximum daily load initiative this year. Since setting targets will not take as long as amending legal frameworks and regulations, one of the ways to keep the momentum going is to set water quality targets on specific river stretches, he suggests. "Once you set those targets, it gives us something to strive for."

Dr Wan Junaidi says his ministry will continue its efforts on the National Water Resources Act this year. Projects approved under the 11th Malaysia Plan for water resource management – such as the monsoon flood forecast and early warning programme, the national water balance study, integrated river basin management plan study, and the development of integrated water resources information system – will also be implemented. The ministry will also establish the Environmental Quality Monitoring Programme (EQMP) to improve quality monitoring systems: "Besides providing information on the status of the country's air, river and marine quality, EQMP is a major tool for an early-warning system," says Dr Wan Junaidi. "This programme would play a key role in developing policies, guiding enforcement, and mitigating pollution related to air, river and marine," he adds. The ministry also plans to reach out to the younger generation "by creating awareness about the environment through many platforms". "We will discuss further with the Education Ministry on starting civic responsibility classes in a bid to encourage the younger generation to care for the environment," says Dr Wan Junaidi.