

We all rely greatly on the immeasurable gifts from the nation's rivers, but all too often they are exploited and abused, even to the point of death, without anyone ever paying a price, writes SUPARA JANCHITFAH



Chawee Boonprom, like most area fishermen, has been forced to take odd jobs since the once-fertile Prachin Buri River was polluted.



In November last year more than 20 manta rays died in Bang Sang district.

Fishermen Chawee and Kajorn Boonprom are in the midst of an unwanted career change. Instead of making their living off the once-bountiful Prachin River, they find themselves selecting popped rice for making traditional Thai sweets. The monotonous selection process earns them 17 baht per sack, about 68 baht a day.

"We have to do it even though it's only a little money; it's still better than doing nothing," said Chawee humbly. Kajorn added that he normally earned 300 to 500 baht a day catching shrimp and fish in the river. This was enough to feed and provide health care for his family and to educate his children.

But no more. The Prachin River has shown few signs of life since last November, when pollution caused a massive die-off both in the fish which swam freely in the river and those which were being raised by villagers in baskets.

"We loaded 10 big trucks of dead fish from the river, worth about 20 million baht. There were also 1,152 baskets of fish that were killed, estimated at 63.4 million baht," said Budsabong Chaokanha from the Centre for Prachin Buri Civic Activities Development.

The project to raise fish in the river-baskets was the brainchild of the Fishery Department. The goal was to prevent overfishing as well as generate income for farmers and others who live along the river.

Like many others in the area, Chawee and Kajorn grow rice, but in many years it does not bring enough income to sustain their families. As they have no money to invest in business, fishing is their primary means of earning money. Thus, the quality of the river is very crucial for them and their families.

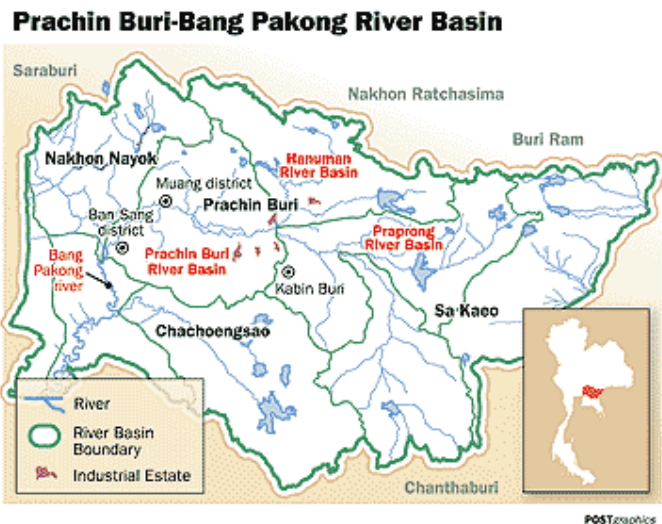
NOVEMBER PHENOMENON

It's still not clear who should be blamed for the die-off. It may have been a combination of factors that pushed the fragile river ecosystem over the edge. In fact water quality problems have become an annual November occurrence, although previously not to the extent of last year.

Many point to the paper factories along the Sarabhi canal, one of the many canals connected to Prachin-Bang Pakong River basin, which receives water from nine sub-districts in Prachin Buri and Nakhon Nayok province (see graphic). The water gate of the canal must be opened around November, the time of the die-off, to allow water to drain to the river in order to dry the rice fields so they are ready for harvesting. An influx of industrial, and possibly agricultural, pollutants when the water gate is opened may be killing the fish.

Some even blame the fish farming operations.

Farmer Porntip Somnam is a member of Ban Sang Tambon Administration Organisation (TAO) in Prachin Buri, who also raises fish himself. Porntip, with the help of Kajorn and others in several districts along the river, is trying to find the reasons for the annual die-off.



For more than two months Porntip has been gathering information from those who have been affected. He has made several attempts to contact all concerned government agencies, which covers five different ministries, to submit his information and get them to look into the problem (see related story).

He has gotten a lot of promises, but so far no real results.

"We are looking forward to long-term solutions for the river. Since 2000, every year we have faced a similar situation, except the year 2005," said Porntip. In 2005 the water quality in the river was fully monitored, especially in the period surrounding the annual opening of the Sarabhi water gate.

Mr Sinard Kamparat of the Provincial Industry Office confirmed that in 2005 his office received a 200,000 baht budget to monitor the water situation before and during the release of water into the Prachin River from the Sarabhi canal.

"We strictly monitored seven concerned areas - this included an area around the United Paper factory. We measured the level of dissolved oxygen (DO) in the river and inside Sarabhi canal to determine the quality of the water," he said.

Low levels of DO indicate high amounts of organic pollutants which provide food for aerobic bacteria in the water. The bacteria experience a population explosion which depletes oxygen in the river, leaving none for fish and other aquatic life. At this time it is not clear, however, if this is what has been killing the fish, since only limited tests have been done for pesticides, chemicals, heavy metals, etc. For the most part only DO and BOD (biological oxygen demand, a test used to measure the concentration of biodegradable organic matter present in a sample of water) tests have been done, and these generally have shown acceptable levels.

Prachin Buri Governor Oros Wongsith said that, also in 2005, the Royal Irrigation Department (RID) director changed the manner of opening the Sarabhi gate to the stop-log system, which allows the careful manipulation of the rate of water release. The governor and many villagers believe that this is what was responsible for the improved situation in 2005, because the top layers of water are cleaned by sunlight. It may also be because the slower release allowed pollutants to be cleared from the river before they built up to critical levels.

"In 2005, the Sarabhi canal water gate was changed into the stop-log system, this allowed us to release the water from the canal gradually, and we were successful in controlling the problem," said Governor Oros, adding that he doesn't know why the RID didn't follow this strategy last year.

In 2006, as in previous years, the RID released the water from a sluice gate at the bottom. RID Director Samart Chokkanapitak told Perspective that he has proposed a budget to change the water gate into a two-layer sluice gate system. Meanwhile, villagers and many provincial authorities remain in favour of the stop-log system.

However, it is quite likely that the increased monitoring, which villagers assisted in, was also a key factor in the absence of a die-off problem in 2005.

"We sent our people to monitor at different places, and this included the paper factory. Some groups rode their boats along the river close to the Sarabhi gate," said Porntip. Mr Sinarad said that in 2006 there was no budget provided for such activities.

"We think that the polluters should be well aware that they should not do harm to the river," Porntip said. He and many villagers consider the Prachin Buri River to be their lifeline; when it is polluted it affects the well-being of all those who live along it. Therefore, the problems should be identified and solved at their root-causes.

"It's too costly an experience for all of us to allow it to be repeated again and again. We need a long-term and sustainable solution," said Porntip.

FINDING THE CULPRITS

Unfortunately, there is a lot more finger-pointing going on than there are attempts to find such a solution. Farmers, fishermen, fish breeders, factory managers and government agencies all look at the problems differently.

Farmers express their need to have water from the Sarabhi canal released in November, and say they don't believe it is pesticide runoff from their fields that is killing the fish.

There are those that say unscrupulous fish sellers are intentionally poisoning fish to make them easy to catch, or in this case, collect.

According to the Pollution Control Department (PCD), some prohibited pesticides have been found in the river, such as Endosulfan and Dieldrin. These were beyond acceptable levels, even seven days after the die-off, after the river had been diluted by waters from the Prapong and Khun Dan rivers.

Some farmers, at Wat Boad and some other areas, asked whether the fish raising activities might be causing the problem, saying the leftover food could be polluting the river.

The fish raisers countered that they are increasing the health of the river because the wild fish in the river eat whatever food is left over.

"Many people have witnessed that there are a lot of fish and shrimp around the fish-baskets," said Manee Udomdejruecha from Bang Taen sub-district, adding that the fish-baskets were usually good fishing spots.

Many fish farmers blame pesticides for the contamination of the river. Porntip does not agree. He pointed out that most farmers in Prachin Buri grow only in-season rice, which does not need large amounts of pesticides or other chemicals.

Mr Sompong Somporn-nimitra, village headman of Pak Klong village, said that people who live along the river contribute to water pollution by throwing their waste into the river, including rotten straw and weeds.

But Porntip expressed his concern that "we shouldn't blame each other and let the real culprits walk freely".

Many people in the affected area suspect that the two paper factories located along the Sarabhi canal are the biggest contributors to the problem.

Locals say they noticed changes in the quality of the water in the river when the first factory, United Paper, began operations in 1995. These were accelerated, they say, with the opening of Inter Pacific Paper Company in June of last year.

Both factories deny they have had any hand in creating water pollution in the river and readily present the results of laboratory tests which show that the quality of their treated waste water is up to the standards stipulated by the Ministry of Industry.

Many poor farmers and fishermen remain unconvinced. They admit they don't have any scientific proof to back up their assumptions, but they believe their own eyes.

Said one farmer who asked not to be named: "In the rainy season the floods spread over whole area. Water from the factory, whether it has been treated or not, flows into farmers' rice fields. Finally it drains into the Sarabhi canal."

Another farmer said that some of his land connects to the United Paper factory and the water from the factory overflowed onto his land. He didn't know if the water had been treated. Later, he said, the company dug ditches to drain the water from his land.

Factory manager Pramote Kaewsatien admitted this was true, saying that "if anyone has complaints we will correct the situation."

Pramote said the company does not release water into the Sarabhi canal, but instead recycles its treated water. But many locals continue to insist that water from the factory overflows onto their land and that it eventually finds its way into the canal as well.

Moreover, Bang Pong sub-district chief Chin Inaieb reportedly told the director of the Pollution Control Department (PCD), Supat Wangwongwatana, when he made a visit to the area, that United Paper hired him to pump water from the company's wells into the company's rice fields during the rainy season.

Director Rachada Singalavanija of the Industrial Works Department said that the water treatment system of United Paper is a closed system which does not release any water into the waterways. But he said that Inter Pacific Paper Company formerly did release treated water into the Prachin Buri River. The department has ordered the factory to refrain from doing so for the time being, but there is a question as to how long the factory can hold the treated water.

Inter Pacific Paper factory manager Tananat Charoensri admitted that his factory used to release half of its treated water into the river, and confirmed that the factory is now holding the water.

During a recent Perspective field survey, there was water from the ricefield next to the factory - brown to black in colour - overflowing into neighbouring rice fields, and it was noticed that there was a water channel releasing water across a road on the back side of the factory.

Director Rachada stressed that there are many factors contributing to the pollution of the Prachin Buri River and that there are many factories (about 720) located in Prachin Buri province. However, he noted that the two paper factories are both located on farmland, which was not suitable.

He said there was nothing that he could do about this now, however, as the factories had gotten all the necessary permits.

"If we don't allow the factories to operate, they can sue us," he said.

The director added that the pollution carrying capacity of each area is different, and if locals do not want factories to be established in their rice fields they must submit petitions to the department before approval is given.

"I can forward such petitions to the ministry in order to issue a regulation to prohibit a factory from locating in a specific place," he said.

Many locals have expressed the desire to participate in the process of protecting their natural resources. PCD Director Supat welcomes this attitude, and urges people to take part in the pollution control monitoring process.

He told villagers at the Sarabhi canal water gate last December that they can "submit lists of all concerned villagers who will be participating to our department by January 3, and we can start finding out what are the causes of pollution in this area together by the middle of January."

LONG TERM SOLUTIONS

Villagers along the Prachin Buri River feel that the current official proposals to improve the quality of their ailing river are inadequate, and they want to take part in the restoration process, writes SUPARA JANCHITFAH



After raising their fish for months, overnight fish farmers were wiped out. Most are in debt and as yet no substantial assistance has reached them.

Soon after the severe water pollution problems in the Prachin Buri River last November, a number of Tambon Administration Organisations (TAOs) sent out letters to different village chiefs asking their cooperation in gathering names of villagers to support the construction of the proposed Huay Samong dam, which has been promoted as a solution to the pollution and other water-related problems.

Likit Takulboonprom, a fisherman in Ta Ngam subdistrict of Muang Prachin Buri, is one of many in the area who are strongly opposed to the plan.

"Building more dams is not a solution to the water problems of people in our area," said Likit. As a fisherman who has observed the river for years, he noted that the massive fish die-offs have occurred only around the time when water is released from the Sarabhi canal. There is no such phenomenon with the release of water from any of the many other canals which empty into the Prachin Buri.

For example, he pointed out that the Sampan canal, which has a larger holding capacity than the Sarabhi, does not create any problems when water is released.

Many officials say that the proposed dam would clear up the problem because it would allow the release of large amounts of clean water to dilute the water from the Sarabhi. Actually this strategy was tried on November 11, when the Prachin Buri was already in bad shape. Starting that morning, the Irrigation Office released 1.5 million cubic metres per day from Khun Dan dam, further upstream on the Prachin Buri River. The action had no effect, and some claim it even made the situation worse. The next day, there were more dead fish downstream. On November 15, 4.5 million cubic metres were released. More fish downstream in Bang Kla in Chacheongsao province died on November 16, and later, on November 23, more fish died at the mouth of the Bang Prakong River.



This big fishing gear reveals how rich the river was. Presently the locals leave the tools behind.



Water around a paper factory which will eventually drain to the waterway.

"The released water did not alleviate the situation," said Porntip Somnam, who is opposed to the dam. He and others also question the need to build a new dam for such a purpose, since the Khun Dan dam is already in operation.

"Why don't officials look into the causes of the water pollution?" asked Porntip.

MORE TESTS NEEDED

Villagers along the river in several districts have organised meetings to find out the facts and propose solutions. From a meeting at the provincial hall last November came a proposal that all concerned parties from all affected provinces, including fishermen, fish raisers, farmers, factory representatives and state agencies, especially officials from the Wong Bon Irrigation Office at the headwaters of the Sarabhi canal, should work together to reach an agreement on the nature of the problems and find long-term solutions. This would bridge the gap caused by misunderstandings. The villagers say they want "no more blaming."

They also want laboratories set up for local access, to allow villagers and civic groups to monitor the water situation themselves and to be able to stipulate more parameters for testing, not only DO and BOD.

According to the report of the Prachin Buri Provincial Fishery Office, the fish in Prachin Buri River died because of a lack of oxygen, but villagers believe there may be more to the story. That is why they want to see more extensive testing of the river water.

"Certainly, we want long-term solutions," said Porntip.

After some villagers submitted their petitions to Prime Minister Surayud Chulanont, Prachin Buri Governor Oros Wongsith said that he had come up with a plan to address the problem involving certain government agencies. However, most of the governor's plans do not pay much attention to the need for participation by the people.

For example, the governor wants the Ministry of Natural Resources and Environment to order the Pollution Control Office to monitor the water situation every month, and also to set up a committee to continue inspecting waste water from the factories.

"We want the (paper) factories to install metres to show us how they use their electricity, so that we can know how much electricity they use to treat water," said Governor Oros.

But unfortunately, the two factories generate their own electricity from coal-fired power plants, which are now also the source of complaints from some villagers (see related story).

The governor said he wants the farmers in the province to change to a strain of rice with a faster growing season so that it can be harvested faster.

He also wants to register those who raise fish in the river. "We want to control the number of fish farmers, as many of them now construct their baskets beyond the stipulated boundary in the river," he said.

Villagers say that some of the measures that the governor proposes do not address the existing problems. For example they say the strain of rice the governor is proposing is not suitable to the ecology of the flood-prone area.

Yuwa Utara, a fish farmer from Bang Taen, pointed out that releasing water sooner would be unhelpful to both rice farmers and fish farmers.

Some feel that many state plans to alleviate water problems are aimed at helping to increase the profits of those who win construction contracts for projects such as dam construction, canal excavation and installation of the automatic DO monitoring system.

Likit said that such systems would "only make us handicapped and force us to ask for help all the time," adding that the best solution is to help villagers to help themselves.

Porntip and many other villagers say they are tired of all the promises. "Who will implement these measures, and when?" he asked. He said that some authorities just want villagers to be submissive and not criticise them or know too much about their projects.

"But we want to be real participants, not passive recipients," he emphasised. "It's our problem, why don't the officials allow us to be part of the problem-solving process? Don't give us any more empty promises."

FOR YOUR INFORMATION

Prachin Buri-Bang Pakong River Basin covers four provinces - Nakhon Nayok, Prachin Buri Sa Kaew and Chachoengsao. There are two major rivers in the river basin, the Prachin Buri and the Nakhon Nayok.

The Prachin Buri River is also known as the Bang Pakong River.

The Prachin Buri River begins at the confluence of the Hanuman and Prapong rivers at Talat Mai village, Kabin Buri district, and then meets up with the Prachantakham River, which originates in Khao Yai National Park, in Prachantakham district. From there it flows to Ta Toom village in Si Maha Phot, past Muang Prachin Buri and then incorporates the Nakhon Nayok river at Bang Taen subdistrict of Prachin Buri. From Bang Taen the river flows to Bang Nam Prieo in Chachoengsao province, where as mentioned before changes its name to the Bang Pakong. From there it streams onward to the Gulf of Thailand. The total length of the river is 122 kilometres. (see graphic)

The ecology of the river system is diverse, as it includes fresh, brackish and saline water. It passes through many ecosystems as well, such as primary forest, a vast peat swamp area and mangrove forest.

There is a Royal Private Project located in the Bang Sang district of Prachin Buri which has also been affected by the pollution of the river.

Did you know? A piece of public land shall keep its status unless there is a parliamentary act or royal decrees issued to revoke such status. According to Article 8 of the Land Law, para 2, if the land is to be transferred to the private sector, this can be done only by issuance of an act, but if for public use this can be done by the issuance of a royal decree.

Did you know? The recycling of kraft paper - a process done at both paper factories - usually involves the use of some chemicals, such as sodium hydroxide and certain polymers, especially during the de-inking process.

Moreover, the by-product wastewater typically is found to have low BOD levels. Research conducted by the Pollution Control Department has found that every tonne of kraft paper manufactured requires about 1.1 tonne of used paper, 2.5 cubic metres of water, some colouring agents, 30 kilogrammes of corn flour, a half kg of boric acid, 0.75 kg sodium silicate, and several other chemicals.

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Locals left out

Villagers have myriad complaints and questions about the operations of two paper factories close to Sarabhi canal in Prachin Buri province, but few are willing to speak up, writes SUPARA JANCHITFAH



Though some officials were aware that dissolved oxygen in the river was below dangerous levels, there was no warning given along the Prachin-Bang Prakong River. — THE CENTRE FOR PRACHIN BURI CIVIC ACTIVITIES DEVELOPMENT

"Please do not use my name in your newspaper," asked Karn (not her real name) one of many farmers who lease land from the Prachin Land Company at a cost of 200 baht per rai.

"I don't know, what I told you may be too direct. I only speak the truth, but I don't know if it will hurt me," she said.

Karn was afraid that that the company would no longer allow her to lease the land on a yearly basis. The land is to be used for rice cultivation only, but a portion of it is swampland which cannot be used to produce anything. Yet she still must pay the full leasing cost.

The poor farmer was unaware that the land company doesn't even own such public land. There are many other pieces of public land within property claimed by the Prachin Land Company, and many of them still have public title deeds.

According to the Prachin Buri Provincial Land Office, there has never been any official revocation of the status of public land. Article 8 of the Land Law states that such a revocation must be accompanied by an act of parliament.

Watchara Chinasetawong, a director of the Prachin Land Company, said that his company had purchased and "developed" about 3,000 rai of land. He added that the property is used to produce water for the United Paper (Public) Company.

He said that normally there is no problem supplying water to the company, but in some years when there is a paucity of rain they use water from the Prachin Buri River.

United Paper has been in operation since 1995.

No entry

On the side of the road leading to Wat Boad is a sign on corrugated iron sheets saying "No entry". Nearby a billboard which says "the water pump of Prachin Land Company" is laid alongside the road before it reaches a big pond.

Watchara said that his company had put up the sign because some ill-willed people had stolen property from the company, adding that the "the company developed the pond."

Some locals said that the pond does belong to the company, but some of the connected land is public property.

A Perspective investigation of the title deeds at the Prachin Buri Land Office revealed there are at least 97 rai of public land located inside the tract claimed by the Prachin Land Company. There is a need for further investigation as some swamps, for example Nong Bua Yai Chu and Nong Chik which used to appear on 1990 and other area land maps, have disappeared from the Prachin Land Company map.

Watchara said his company does not prohibit people from using the marshlands and the swamps that still remain in the area, and that some people do still use them.

However, many locals said they were unaware they were still allowed to enter the property. Others said fish were now hard to find in the swamps and when they can be caught they are smelly and no longer delicious.

"They might have released some not-so-clean water in the swamp," said a farmer in Wat Boad Moo 5.

Apart from complaints about the loss of the public swamps, many people also complained about the coal-fired power plant operations of both factories, which they suspect are behind the low rice yields this year.

"It's obvious," said a farmer in Ban Sang (located near Inter Pacific Paper). He was only able to harvest two tonnes of rice from 40 rai of land. Another farmer in Wat Boad Moo 2 who cultivated 30 rai could only harvest two tonnes of rice. Still another farmer in Bang Kadi village, located near United Paper Company, said her 45 rai of land yielded only seven tonnes, which is abnormal as it used to produce about 20 tonnes. Currently rice brings farmers only about 5,200 baht a tonne.

Three farmers in Bang Pong, who asked not to be named, said they didn't want to blame the factories, but they have doubts about their operation.

"Can anyone tell us if the coal-fired power plants and wastewater from the factories have anything to do with our low production?" they asked.

United Paper began operations in 1995, but only started generating its own electricity in late 2005. Both companies' power plants have an output capacity of 9.5 MW. According to the 1992 Environmental Law, coal-fired power plants over 10 MW need to conduct an environmental impact assessment (EIA).

The sulfur dioxide produced in coal combustion is known to pose an immediate threat to health, and can also cause acid rain that poisons lakes, rivers, forests and crops.

Both companies state that they use bituminous rather than lignite coal as their main fuel, and that bituminous coal achieves optimum combustion, thus reducing the levels of carbon dioxide and soot.

But some locals report that there is black dust in the rain water they collect, and they are forced to purchase bottled water for drinking.

People also are unhappy about the noise from Inter Pacific factory.

"It may be tolerable in the daytime, but not at night when we need to rest," one said.

Some monks in two temples in Ban Sang also complained about the noise, the smell and the water quality in the area.

The Inter Pacific Company said that the noise come only when the factory flushes its pipeline, and it is planning to install a silencing device.

Along with the growing frustration, fear among the locals is widespread. Although there are no politicians' names listed on the boards of directors of the two companies, most locals know who purchased the land. Even when they know what questions to ask about the companies' operations, many do not dare.

"A bullet is too cheap, we had better not speak out," said one man, apparently speaking for many.

EDITORIAL

Development takes awareness

One of the toughest balancing acts in modern-day politics is to demonstrate concern for the environment while at the same time maintaining or increasing the pace of industrialisation. The power of pressure groups espousing one or the other viewpoint is usually so great as to make the job almost impossible.

This is one reason why so many projects have been put on hold in the past decade or so, the root cause being the fundamental conflict between development and conservation of natural resources. Efforts by developed countries to maintain economic growth without any harm being done to the environment have given rise to the new catchword - "sustainable development."

The concept is not new in Thailand. Advocates of sustainable development have for a long time spoken out against the pollution of air, water and soil as a result of rapid and unregulated industrial growth. But little has been done to solve the escalating problem. A case in point is the pollution of the once-bountiful Prachin Buri River.

For the past six years, with the exception of 2005, hundreds of thousands of fish which swam freely in the river, along with those raised by fish farmers, have died mysteriously. Yet, it is still not clear who should be blamed for this environmental disaster. Many point their fingers at the paper factories located along a major tributary of the Prachin Buri River, while others blame pollutants from ricefields.

Since the latest massive die-off last November, fish farmers have asked all concerned government agencies, which cover five ministries, to get them to look into the problem. All they got was promises, but no solution to their plight.

It must be noted that in 2005 - the year when there was no die-off in the river - the Prachin Buri Provincial Industry Office received a special budget to monitor the quality of water in the tributary where the paper factories are located. That budget was cut in 2006, which saw another massive death in the river.

Most of the area in the Prachin Buri River Basin is farmland, yet the paper factories are located right in the middle of it. This kind of mistaken policy is not new. Fourteen years ago, lignite-fuelled power plants in Lampang province emitted sulphur dioxide and lignite dust, causing villagers living nearby to become sick. Animals died and farm produce was contaminated.

Producing cheap electricity is important, but not so important as to justify damaging the health and livelihood of innocent people.

What is ironic is that the power plant company had won a reputation as one of the more efficient state enterprises and was once granted a prized triple A rating.

Obviously the problems faced by the people in Prachin Buri must be corrected. The country clearly needs a long-term solution that minimises pollution problems. The "polluter pays" policy must be enforced along with the principle of cooperation among the public, the government and the private sector.

More importantly, everyone must share the same concern for the environment. Without environmental awareness among the public, the country cannot protect the

environment. People will continue to litter the streets and dump everything into the rivers and canals with impunity.

Many cities and villages in Thailand are situated along the rivers or its tributaries, and the development and well-being of these cities and villages is strongly dependent on water. When it is polluted it affects all those who depend on it.