

FOCUS

Dead fish, toxic drinking water ... Now for the human toll

The environmental disaster that threw Hechi into the global spotlight has been years in the making, writes Shi Jiangtao in the first instalment of a two-part series



Take a look at Hechi (河池) city, a booming mining town in the north-west of Guangxi (廣西), and the jarring dissonance immediately hits you.

Misty limestone peaks stretch away from a crystalline river, all set in a lush green expanse. It would be one of the most mesmerising landscapes in the mainland, except for the dozens of smokestacks, short, tall, all grimy, lining both sides of the river.

The chimneys mostly belong to metal smelters, one of which was responsible for January's poisoning of the Longjiang, an upstream tributary of the Pearl River. The authorities are not naming the culprit, however.

In the daytime, the chimneys appear to be idle. However, locals living along the river tell of the smelters' dirty secrets. At night, they say, those chimneys churn out a vast cloud of black smoke that enters their homes and stirs them from sleep, gasping for breath.

"The filthy smoke billowing through those chimneys often chokes us awake, and we could also see flames light up the night sky," said one resident of a city suburb, who refused to be named for fear it would bring trouble.

On January 15, the rest of the country woke up to the pollution hor-

ror gripping the city. Pictures of a river of dead fish shocked the nation and led to the discovery that 21 tonnes of cadmium, a life-threatening toxic metal had been leaked into the Longjiang.

The scale of the spill is equal to about two-thirds of the total amount of cadmium discharged nationwide in 2010. Experts warned of an immediate health and environmental challenge as well as serious long-term implications.

Villagers living along the river are still being given bottled water by the government and warned off drinking from local water sources.

Hechi and the surrounding area holds deposits of 46 types of non-ferrous metal and has some 154 heavy-metal smelters crowded along the river.

They have helped make the city the world's largest production base for indium, a rare metal essential for producing liquid crystal display screens and solar panels.

Cadmium is a by-product of processing indium. It can cause cancer and failure of the nervous system and lungs. It can contaminate the food chain through crops and other farm products. Once absorbed into the body, its harmful effects can last for up to 35 years, according to studies by the World Health Organisation and Fudan University's school of public health.

Hechi's heavy-metal smelters contribute more than half of the city's total economic output. They are the engines that have driven an economic boom over the last decade.

Yet residents say they city is paying a heavy price, with the rapid deterioration of the environment. For many, the smelters mushrooming along the river are time bombs that will turn rivers black and verdant mountains barren.

The smelters require a lot of water to operate, yet many are not even equipped with the facilities to tackle mining waste and metallurgical slag, and have been dumping industrial waste and sewage into the river for years, according to local and state media.

Routine sloppiness, lax government scrutiny, disregard for environmental standards and the local government's determination to favour protecting the industry over the public have made the situation worse.

The latest metal spill, feared to be one of the worst on the mainland in decades, came as little surprise to many residents.

"We are doomed due to worsening pollution," said fisherman Lu Senguo, who lives in Beiji village in the city of Yizhou, which is under Hechi's jurisdiction. "We've been hit by pollution repeatedly over the past few years and we all know it is just a matter of time before a major pollution disaster hits."

Lu said making a living by catching fish has become increasingly difficult on the Longjiang. His family was hit hard by the contamination.

"We've never seen contamination on this scale and it is the first time that local authorities have explicitly warned us against drinking from the river," said the 40-year-old, who has been fishing on the river for 20 years.

His family, Lu said, are victims of the city's spectacular economic rise.

Disturbingly, a study by Hechi's Centre for Disease Control found that cadmium and other heavy metals made their way into the food chain years ago.

Excessive levels of cadmium were found in as much as 20 per cent of food sold in Hechi, including meat, vegetables, eggs, milk and tea, in 2009 and 2010, according to Caixin Media, citing the study published in a medical journal last year.

Hechi has not – as yet – suffered the fate of many other areas where industrialisation has been coupled with the emergence of so-called "cancer villages", where disease rates have spiked.

But environmentalists have long warned that such a future for the people of Hechi cannot be ruled out if local authorities continue with such reckless development.

Leaks of toxic metals such as arsenic, lead and cadmium have been common in Hechi over the past decade, threatening freshwater supplies and posing health risks for hundreds of thousands of people living along the Longjiang.

In October 2008, a chemical spill left at least 450 people in Hechi poisoned with arsenic. Last year, more than 30 children living near metal smelters in the city's suburban Nandan county tested positive for excessive concentrations of lead.

80%

The proportion of sediment in the mainland's major rivers, lakes and reservoirs contaminated by heavy metals

versity's school of geoscience and environmental engineering in Changsha (長沙), Hunan (湖南), said: "It remains an arduous task for Hechi authorities to plug management loopholes and tighten scrutiny over so many smelters."

And if local authorities fail to learn the right lessons from last month's cadmium spill, he warned, more disasters are sure to follow.

Hechi's pollution woes are a microcosm of the appalling problems of metal pollution facing the nation.

The rising number of health scandals has led to growing public concerns about the issue, triggering protests and unrest.

At least 10 per cent of the 120 million hectares of farmland is contaminated by metal leaks and other pollutants, Xinhua has reported.

The Beijing-based *Century Weekly Magazine* has reported that as much as 10 per cent of rice grown on the mainland is contaminated with toxic metals such as cadmium.

And a survey by the Ministry of Environmental Protection showed that more than 80 per cent of the sediment in the country's major rivers, lakes and reservoirs is contaminated by heavy metals.

More than 30 metal poisoning outbreaks have occurred across the country since 2009, according to statistics from last year.

In 2009 alone, the environment ministry tackled 12 metal pollution scandals that left over 4,000 people suffering lead poisoning and 180 people with excessive concentrations of cadmium.

In resource-rich southern and southwestern provinces, including Yunnan (雲南), Hunan, Guangdong and Guangxi, observers have blamed excessive mining and lax government control for the extremely high human toll – including unusually high rates of cancer.

Last year, Beijing launched a 75 billion yuan, five-year campaign to tackle the problem of metal pollution, and listed 14 provinces as particularly hard hit, among them Guangxi, Hunan, Guangdong, Jiangsu (江蘇) and Zhejiang (浙江).

However, the plan itself has yet to be made public. Ministry officials maintain it is a national secret.

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FISHERMAN LU SENGUO



A woman washes her family's laundry in the Longjiang, just days after tonnes of carcinogenic toxins poured into the river. Photos: Simon Song

Culture of secrecy that dirties mainland's name

Despite Beijing's commitment to greater openness and accountability on the issue of pollution, and in the face of mounting demands from the public, little headway has been made on government transparency, particularly at local levels.

A recent study by the Beijing-based Institute of Public and Environmental Affairs and the US-based Natural Resources Defence Council showed local authorities have done a poor job of responding to complaints about pollution and environmental damage.

Yang Sujuan, an associate professor at the China University of Political Science and Law in Beijing, said local governments still viewed transparency as a threat to their obsession with rapid growth and stability as well as to their power. He said they remained reluctant to take meaningful steps to give the public a voice.

Analysts say the Longjiang toxic spill underlines a culture of government secrecy that continues to undermine Beijing's credibility and deepen a simmering distrust. Shi Jiangtao

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Wrong side of the river



More than a month after it emerged that the Longjiang had been polluted with cadmium when tonnes of industrial waste drained into the river, many locals remain frustrated by officials' lack of transparency over the spill. Photo: Simon Song

Villagers kept in the dark about a cadmium spill while others nearby received help has fuelled talk of a cover-up, writes Shi Jiangtao in the second of a two-part series

Hechi villager Lu Yu feels frustrated and angry that his forgotten village on the right bank of a tributary of the Pearl River has been left to deal on its own with the massive toxic metal spill in Guangxi.

Nearly a month after one of the worst cadmium contaminations on the mainland in decades, the 21-year-old and his parents, who make a living from fishing, still depend on the water from the polluted Longjiang for their livelihoods.

Lu says he has many questions about the pollution, which was caused by the illegal upstream dumping of industrial waste containing the little-known but life-threatening element, but that no one in the government bothers to hear him out or explain.

"We are worried and are very concerned about the health impact of the contamination," said Lu, himself a migrant worker in Guangzhou. "But no government officials have come to our aid, either by offering alternative water sources or by answering our questions."

Like Lu, residents of Beiji in Yizhou city, under Hechi's jurisdiction, also felt concerned about the government's seeming evasiveness over the spill's severity. Many key questions have gone unanswered.

Some 200 Beiji villagers have accused Hechi authorities of deliberately denying the fact that their village was affected by the spill and keeping them in the dark about the health hazards posed by cadmium, one of the most toxic metals on earth.

Beiji villagers are particularly bitter that while they are left helpless, two villages sitting on the opposite river bank have enjoyed freshwater supplies and full media attention.

The 220 villagers in Laren and Guangxia have received at least one bottle of water per household, free of charge, every day over the past three weeks, Xinhua reported.

Although just across the river, Laren and Guangxia were identified by Hechi authorities as the only two villages affected by the spill, while Beiji, according to the city government, was not affected at all.

The government also insists it is safe for Beiji villagers to drink from the community's freshwater source – a large pit dug just a few steps from the polluted river – citing a drinking water test conducted by Yizhou's centre for disease control on January 23, the first day of the Year of Dragon.

Villagers were quick to point to obvious discrepancies and conflicting official explanations regarding the contamination.

For example, Hechi authorities distributed a written warning about the spill to each family in Beiji on January 23, telling villagers not to drink water from the river because of contamination caused by unspecified heavy metals.

On February 4, they again warned that the river posed a health threat to people and animals.

Meanwhile, China News Service reported the mayor of the downstream city of Liuzhou, Zheng Junkang, as saying that cadmium concentrations on the upper reaches of the Longjiang were still nearly 20 times the national safety limits.

However, Hechi authorities have repeatedly reassured Beiji villagers that their drinking water is safe.

Villagers, distrusting and disappointed in the official line, staged a rare demonstration on February 3 demanding health check-ups, fair treatment and to know the truth about the extent of the contamination.

But environmental and health officials in Yizhou have stuck to their

assertion that the quality of drinking water in Beiji meets national safety limits and that villagers shouldn't worry about the cadmium pollution.

They promised to conduct another test on the village's drinking water, but villagers said they did not believe the results were likely to be credible.

"I am really confused," said villager Long Binggang. "How could it be possible that it is safe to drink from the river while it is still badly contaminated?"

"We know pollution exists, but how can we tell how bad the metal contamination is without a trustworthy government explanation?"

Lan Richeng, the head of Beiji village, said it was unfair they were treated differently and that government-controlled media had ignored their sufferings.

"We don't even know what heavy metals caused the contamination and we don't understand why the government refused to provide bottled water for us," he said.

According to Lan, pollution of the Longjiang has worsened over the

No government officials have come to our aid [or answered] our questions

LU YU, VILLAGER

years, but his village has no other alternative water source.

Not all of the villagers, who largely live by planting sugar cane and breeding silkworms, can afford to buy bottled water every day at 7 yuan (HK\$8.60) per bottle, Lan said.

Long Binggang is one of them. The 24-year-old father-to-be said: "We have bought bottled water from time to time. But as we need a lot of water every day it is impossible to cook with bottled water alone."

The lack of transparency in the handling of the spill may have more grave consequences as many in the village, like Long and Lu, continue to use water from the river to cook and to tend their farm produce.

Despite the Hechi authorities' denials of metal poisoning cases, many local residents have reported symptoms they believe to be linked to the consumption of contaminated water and food.

Many in Beiji, as well as Guangxia and Laren villages, said they have suffered from diarrhoea. Lu Yu said he felt itchy after taking a shower with polluted river water.

Fisherman Qin Zutie began to find dead fish in the river in mid-January, but did not realise

it metal contamination was responsible until at least a week later. He is upset that the government didn't disclose news of the toxic spill.

"We had no idea about the pollution. Or we would never have eaten those dead fish as we usually did," Qin said.

Fishermen on the Longjiang have continued to report the sighting of dead fish. More than 40,000 kilograms of fish were killed, affecting over 230 fish farmers, according to an estimate by the Hechi government earlier this month.

Locals have also challenged official reports of the contamination. The government said mid-January sightings of dead fish marked the start of the spill.

But Xinhua and other state media have quoted fishermen as saying they began to find dead fish as early as January 7, eight days earlier than the official story.

According to various mainland media reports, pollution experts said the contamination may have been caused by other toxic metals besides cadmium, which

they said was unlikely to be the real cause of the fish dying.

China News Service also lashed out at the Hechi and Liuzhou authorities over their lack of transparency in tackling the contamination in the first place, saying that escalated the crisis.

According to the semi-official agency, Hechi's government delayed reporting news of the spill to the city of Liuzhou, for at least three days, until January 18.

The agency also claims Liuzhou's authorities wanted to play down the spill during the Lunar New Year.

Officials waited for days before making news of the spill public, to make public the information about the spill.

By then, the city of 3.7 million had a fully-fledged pollution scare on its hands, with tens of thousands of residents rushing to stock up on bottled water.

Analysts said the fact that the pollution spread to Liuzhou, the second-largest city of Guangxi, actually helped break the official silence over the massive spill and forced local authorities to ramp up efforts to tackle the disaster.

Despite repeated assurances as to the safety of drinking water, the toxic cadmium slick, stretching over 300 kilometres, is still moving slowly towards Liuzhou, threatening freshwater supplies to the city and downstream areas, including Guangdong.

Analysts say Beiji villagers' accusations have put the government's renewed pledges on pollution control to the test.

Guangxi's Communist Party chief, Guo Shengkun, promised last week to severely crack down on polluters, clean up the environment and not let the public drink a drop of contaminated water.

However, Greenpeace China campaigner Ma Tianjie said: "Local authorities have placed their top priority on maintaining stability, but the lack of openness and accountability has simply resulted in unwanted consequences, such as widespread pollution scares and growing distrust."

Ma said mainland authorities appear to have made little progress in lifting secrecy on important environment information despite the fact that local authorities have been required to report pollution cases swiftly to higher-level governments since the massive chemical spill on the Songhua river in 2005.

In an effort to repair an image tarnished by the spill, seven local officials in Hechi, including the city's environmental chief, have been removed from their posts.

And Hechi's mayor made an apology early this month to people who have been affected by the spill.

Analysts, however, said those move were far from being enough to restore crumbling public confidence and regain the people's trust.

Guangxi authorities have blamed two smelters in Hechi for illegally dumping tonnes of cadmium into the Longjiang.

They arrested seven people, mostly factory executives, for alleged roles in the spill early this month.

Members of the official expert panel of an emergency task force handling the spill have disputed that explanation for it, however.

"It seems unrealistic for us to believe that small-scale smelters were capable of discharging enormous amounts of industrial wastewater containing as much as over 20 tonnes of cadmium within such limited time," said Xu Zhencheng, a leading member affiliated with the environment ministry, according to the *China Business Journal*.

With up to 13 tonnes of cadmium remaining undissolved in the river, Zhou Yongzhang, director of Sun Yat-sen University's Research Centre for Earth, Environment and Resources, said the spill would have a lasting impact on downstream areas, including Guangdong, as cadmium deposits will eventually wash down to other areas along the river.

Ma of Greenpeace China said more evaluation was needed of the long-term environmental impact of cadmium deposits.



(Clockwise from top left) A view of the Liuzhou city; a dead fish; a notice on the wall of a house in Dongli village telling villagers not to drink river water due to heavy metal pollution; a man emerging after swimming in the river earlier this month. Photos: Simon Song

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The number of years the effects of cadmium can last once it is absorbed into the body, according to a World Health Organisation study