

ENVIRONMENT

RED RIVER KEEPS ON ROLLING

One of China's best-loved waterways has had a makeover that's eradicated pollution caused by excessive, unregulated industrial activity and restored its natural beauty.

Yang Jun and **Zhao Lei** report from Renhuai, Guizhou province

Every Chinese person knows that the Chishui River in Guizhou province has two claims to fame: One military, the other cultural.

It's said that 80 years ago, during the Long March, Mao Zedong stood on the banks of the river and stared deep into the wine-red water before giving the order to cross the swollen torrent.

During a four-month period in spring 1935, the Communist forces crossed the river four times to evade Kuomintang troops and negate their attempts to strand them.

The victory saved the Red Army from annihilation, and many historians consider it to be the turning point that helped Mao and the Chinese Communist Party to establish the People's Republic 14 years later.

The river is also famous because Moutai, the best-known alcoholic beverage in China, is made with water drawn from it. The potent liquor is so highly rated that late premier Zhou Enlai toasted Richard Nixon with it at a State banquet held during the former US president's first visit to China in 1972. Nixon is said to have been deeply impressed by the drink's unique flavor.

The Chishui, or "Red Water", River is a tributary of the Yangtze River, and rises in Zhenxiong county, Yunnan province, before flowing along the border between Guizhou and Sichuan province. Its name is derived from the color of the water during the flood season when iron-rich soil from the riverbank is washed downstream.

Sewage 'lagoon'

Many years later, the two world leaders and almost everybody who took part in the action along the river have passed away, and the local scenery has changed tremendously. Even the river itself is different.

"In the recent past, we poured domestic sewage directly into the river, unwittingly polluting the water," said Chen Lin, from Huaiyangdong village in Tanchang township. The 47-year-old has lived beside the Yanjin River, a major tributary of the Chishui River, all his life. "The water was not so clean as it was when I was a child," he said.

Yang Pushu, another Huaiyangdong resident, recalled that when he worked at a department store in Chishui city 10 years ago, a large number of factories upstream, mainly paper mills, used the river as a 'lagoon' for sewage and industrial waste.

"A lot of different types of colored foam floated on the surface, and the smell was terrible," he said. "No one dared drink water taken from the river because it stank even after we boiled it."

A metaphorical stench also reached the offices of the provincial leaders, sparking concerns that if they failed to rectify the situation the effect on local cities, whose economies are reliant on tourism and the liquor industry, would be catastrophic.

According to official statistics, the two industries contribute a combined 20 percent of the province's annual tax uptake. However, their operations were being severely disrupted by the activities of small distilleries, coalmines, cement factories, and paper mills that discharged vast amounts of pollutants into the river basin, despite regulations and guidelines issued by the provincial government in 2011 and 2012.

During a 2012 inspection of land along the Guizhou stretch of the river, Yuan Zhou, deputy head of the Provincial People's Congress' Standing Committee, described the ecological situation as "astonishingly bad" and ordered the local authorities and businesses to take all necessary measures to solve the problem.

Top priority

In 2013, the Guizhou government named the cleanup of the Chishui River as the No 1 project on its agenda for long-term environmental protection.

To identify the specific responsibilities of local officials, a mechanism was set up to appoint city mayors, district heads and county leaders as "river section chiefs" who are personally responsible for environmental protection on their stretch of the river.

Liu Ningrui, chief inspector of regulatory compliance at the environmental protection bureau in Renhuai, a county-level city, said the mechanism has been very effective.

"Now, all the county and township leaders are section chiefs. They pay close attention to the supervision and regulation of local enterprises, and to raising people's awareness of environmental protection," he said.

Designated teams patrol the riverbanks every morning to ensure that factories aren't pouring pollutants into the river and that villagers aren't disposing of household waste inappropriately.

"The section chiefs have worked with my bureau to close down several unlicensed distilleries, and they have also ordered dozens of businesses to cease or upgrade operations that caused pollution," Liu said. "Of course, one important reason behind this active cooperation is that they know anyone who fails to conserve the river will be held accountable and punished."

All the paper mills in the city have been closed down and the employees have either been transferred to farmland where they grow organic produce or work as tour guides.

The government has also helped large distilleries, which contribute huge amounts of tax, but are also major polluters, to build and operate six wastewater disposal facilities, according to Liu.

"These facilities treat about 1,800 metric tons of wastewater generated by distilleries every day. We have decided to build more of them to ensure that at least 7,000 tons of wastewater can be processed every day," he said.

To control the volume of wastewater, nine townships in Renhuai have been banned from approving new distilleries or the expansion of existing plants, and the local government is making strenuous efforts to relocate distilleries to areas designated for the liquor industry, he added.

Visible improvements

Chen Lin said he's proud the river is now so clean the water can be drunk untreated, and his village has founded a company to bottle and sell it.

"Now we use lees (organic waste generated during the liquor-making process) instead of manure and chemicals to fertilize the land where we grow sorghum. The lees are almost pollution-free and nurture the soil better than manure or chemical fertilizers. That's enabled us to raise our yields by 750 kg per hectare," he said. "The price of each bag of lees is 80 yuan (\$13), and the government



The Chishui, or "Red Water", River is a tributary of the Yangtze River. The world-famous Moutai liquor is made with water drawn from the river, which also holds a special place in modern Chinese history because of events during the Long March in 1935. PHOTOS BY WANG ZHUANGFEI / CHINA DAILY



Moutai is distilled from fermented sorghum. Experts believe that the unique climate, water and vegetation in Maotai township make it the perfect place to distill the famously potent spirit, which is one of China's best-known exports.

provides a subsidy of 40 yuan per bag to encourage its use. Thanks to the crystal-clear water and cleaner air, my family can earn at least 30,000 yuan from tourism every year."

Xiong Dewei, director of the Guizhou Provincial Environmental Protection Department, said that since 2013, the local authorities have invested more than 2 billion yuan in conservation projects on the river, and in the past two years processing facilities that can dispose of 120,000 tons of wastewater a day have come into operation.

Businesses are also now required to obtain licenses

before they are allowed to draw water from the river, a move that's successfully reduced the amount of water used and slashed waste generation, he said.

Guizhou is actively collaborating with the neighboring provinces of Sichuan and Yunnan, which are also watered by the river, to share information, monitor conditions and conduct joint law enforcement operations.

In the past two years, combined environmental protection teams from the three provinces have inspected facilities and procedures at more than 800 companies along the

river, he added.

The policies seem to have paid off; in September, Xiong's department raised the water quality status from level 3 to level 2, indicating that it is now potable without treatment.

Challenges remain

"Though we've achieved a lot, there are still many challenges to successful environmental protection," said a statement issued by the environmental protection bureau in Renhuai. "There are a great many sources of pollution across the city, but the bureau doesn't have enough personnel to oversee

A snapshot of times long gone

The Chishui River, a tributary of the Yangtze River, is the last safe haven for a number of rare and endangered species of fish, so it should never be developed commercially, a senior hydrobiologist said.

Cao Wenxuan, an academician of the Chinese Academy of Sciences and senior researcher at the academy's Institute of Hydrobiology, said he understood the economic priorities of the local authorities, who are attempting to foster rapid growth, but stressed that the government should spare no efforts to preserve the waterway because it's the only stretch along the upper reaches of the Yangtze River that doesn't have a dam.

"That means the river is a living example of what the Yangtze River used to be before it was overexploited by humans," Cao said. "Moreover, keeping the river clean will allow endangered species in the Yangtze River to survive."

Cao expressed concern about a plan published last year by the transport department of Zunyi, a city on the river in Guizhou province, to introduce a river-route expansion project that would severely affect endangered species in the Chishui River.

He urged the city government to reconsider this project. "The natural environment of the Chishui would be changed irreversibly and a great number of vessels are expected to use the route if the expansion plan becomes a reality," he warned.

ZHAO LEI



all of them," it continued.

In addition to those problems, some government departments regard environmental protection as solely the responsibility of the bureau, and have been reluctant to cooperate with pollution control and monitoring, which has hampered progress, the statement said.

For Liu, the biggest problems are a lack of funds and a shortage of workers. A wastewater disposal facility that can handle 1,200 tons each day costs about 700 million yuan to build, and requires huge investment from the cash-strapped local government, he said.

"As for inspections, the bureau has just 44 inspectors and seven cars, but we are responsible for conducting checks on nearly 1,000 companies, so the workload is very heavy," he said, adding that bureau has asked the city gov-

ernment to increase the headcount in the inspection unit.

Zhang Jiebo, deputy Party chief of Maotai township in Renhuai, said the local people have welcomed the measures to clean up the river and restore the area's natural beauty because the work has improved the quality of their lives and will attract tourists in greater numbers.

"The local people have been very cooperative and have supported our crackdown on illegal business operations that contaminate the river and their farmland, but they aren't only thinking of the financial benefits. They always say the river isn't their private property — it doesn't belong to them, it belongs to generations still to come," he said.

Contact the writers at yangjun@chinadaily.com.cn and zhaolei@chinadaily.com.cn