

## CHINA

## Environment

# Yellow River cleanup brings bright future

Improvements to China's second-longest waterway have helped to raise incomes and improve people's lives. **Zhao Ruixue** reports from Jinan, with **Shi Baoyin** in Zhengzhou and **Sun Ruisheng** in Taiyuan.

Zhang Qinglin, a resident of Ronghe town, Wanrong county, Shanxi province, visits the Fenhe River, a couple of kilometers from his home, every other day.

The 75-year-old enjoys watching the river meander through wetland before it joins the Yellow River, China's second-longest waterway.

"There was a time when the Fenhe's water quality had deteriorated. It was like the river you had been living on for generations had got sick. Now, though, the extensive wetland is helping to make the water clean and reduce flooding," he said.

Running through 27 counties and districts in Shanxi, the 716-km-long Fenhe is the Yellow River's second-largest tributary.

President Xi Jinping has stressed the importance of the ecological protection work on the Fenhe. He said the work must be undertaken in practical ways to ensure that clean water flows into the Yellow River, which flows for 5,464 km through seven provinces and two autonomous regions. The river basin has a drainage area of more than 752,000 square kilometers.

In 2018, residents of the provinces and regions through which the Yellow River flows accounted for 30.3 percent of China's population, while their GDP accounted for 26.5 percent of the national total.

"The protection of the Yellow River is critical to the great rejuvenation and sustainable development of the Chinese nation," Xi said last year.

An Aug 31 meeting of the Politburo of the Communist Party of China Central Committee, presided over by Xi, stressed that efforts should be made to improve the environment of the Yellow River Basin.

The measures should optimize the allocation of water resources, facilitate high-quality development of the whole basin, improve people's lives and promote the inheritance of Yellow River culture.

"Provinces and regions along the river will take targeted measures according to local circumstances to protect the environment in the Yellow River Basin," said Li Bin, secretary-general of the Chinese People's Political Consultative Conference, the top advisory body.

She made the comments at a symposium on the protection and high-quality development of the river, held in Lanzhou, Gansu province, early this month.

For provinces on the river's upper reaches, including Qinghai and Gansu, the priority must be to protect and restore the ecosystems of lakes, glaciers, wetland and grassland to conserve water for the basin, she said.

She noted that people who live along the middle reaches must make efforts to reduce water and soil loss, and control the discharge of pollutants into the river.

Provinces on the lower reaches must emphasize prevention of natural disasters, build sound ecosystems for wetland and rivers, and strengthen control of pollution sources, both industrial and domestic, she added.

## Conservation

According to Cheng Xiaobo, Gansu's vice-governor, as an important water conservation and supply area for the river, the northwestern province has made progress in restoring the ecosystem, protecting water and soil and controlling pollution.

By the end of 2018, more than 24 percent of Gannan Tibetan autonomous prefecture in Gansu was covered by forests, while vegetation coverage, a comprehensive index of the flora covering the grassland, had reached 96.78 percent.

The prefecture supplies 6.95 billion cubic meters of water to the Yellow River every year, accounting for 11.4 percent of the total runoff — all the water entering the river from sources such as tributaries, rainfall and meltwater.

The provincial development and reform commission said Gansu is carrying out second phase projects to consolidate the health of the ecosystem by integrating the management of grassland, forests, wetland, biodiversity and the river basin.

Gansu, which is home to a large expanse of desert, is working to prevent sand and soil erosion through measures such as planting grass and



The Fenhe River, the Yellow River's second-largest tributary, meanders through farmland in North China's Shanxi province.

XUE JUN / YUNCHENG EVENING NEWS



The Xiaolangdi Reservoir in Henan province discharges floodwater on July 26. MIAO QUNAO / ASIA NEWS PHOTOS



Birds fly over the Yellow River Delta wetland in Dongying, Shandong province. WANG KAI / XINHUA

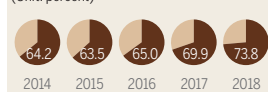
## Fortune and floods

### 1. Water quality

China has a five-tier quality system for surface water, with Grade I being the highest level. Water rated as grades I to III is of good quality with no or little pollution and can be used for drinking after processing. Water rated lower than Grade V is severely polluted.

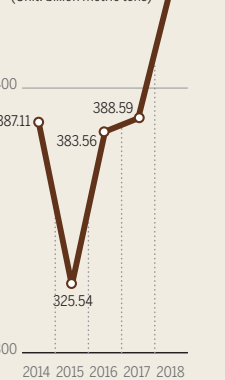
**Water ranked grades I to III as a proportion of the length of the Yellow River and its main tributaries**

(Unit: percent)



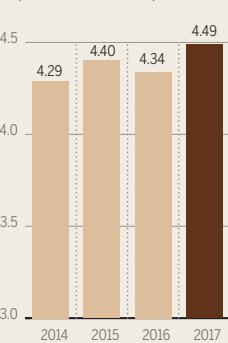
### 2. Annual precipitation in the Yellow River Basin

(Unit: billion metric tons)



### 3. Amount of sewage discharged into the river every year

(Unit: billion metric tons)



### 4. The river and the provinces and regions it runs through



Source: Yellow River Conservancy Commission

LIU LUNAN / CHINA DAILY

restoring farmland to reduce the amount of sediment entering the Yellow River.

By the end of last year, the province had treated 65,700 sq km of land where sand and soil were easily carried away by winds and water, according to the provincial water resources department.

## Pollution controls

During a May inspection tour of Shanxi, Xi expressed satisfaction with the changes made to the environment along the Fenhe River and stressed the importance of green development.

In recent decades, the water quality of the Fenhe has fallen as a result of the provincial economy's reliance on coal mining and heavy industry.

Water samples from major monitoring points were rated below Grade

V, the lowest level in China's five-tier system of standards, according to the Shanxi Department of Ecology and Environment.

In 2015, the province began a campaign to improve the environment of the Fenhe and other rivers.

Curbing pollution from industrial and household wastewater is the most crucial part of the campaign as discharged wastewater once accounted for about 90 percent of the Fenhe's runoff, the department said.

By the end of June, all the river's monitoring points in Shanxi reported water quality at higher than Grade V. Zhang Aizhen, a resident of Shanxi's Jingle county, exercises almost every day at a wetland park on the banks of the Fenhe.

She said the changes have been remarkable. "The river was once full of garbage and it stank. People who lived

nearby couldn't open their windows in summer. Now, the environment is so pleasant that walking here always puts me in a good mood," she said.

According to officials, the province will invest more than 87 billion yuan (\$12.8 billion) in the next 15 years to improve the Fenhe's environment.

## Fewer natural disasters

On Aug 31, the central government stressed the need to reduce floods and droughts along the Yellow River over the long term, and improve the country's ability to deal with natural disasters by strengthening research.

Henan province, home to one of the biggest populations within the Yellow River Basin, has made the instructions a top priority.

Zhang Fei, 38, has spent the past 15 years building and guarding embankments along the Yellow River

at the province's Kaifeng city, where the river is higher than the city's ground level because its bed has been raised by silt carried by the water. When flooding occurs the city faces the risk of being submerged.

Zhang Fei learned a lot from his grandfather about the river floods in the 20th century.

In 1953, the river flooded and covered about two-thirds of an embankment at Kaifeng, putting hundreds of residents at risk. For nine days and nights, Zhang Fei's grandfather led a team to repair the structure.

The reservoir at the Xiaolangdi Hydroelectric Power Project, at Luoyang in Henan, controls the flow of the river, so there have been no floods since it began operations in 1997, Zhang Fei said.

"We are now greening the area along the river to improve the comprehensive ecosystem. Thanks to ecological belts, sandstorms have also been substantially reduced," he said.

At Kaifeng, an 877-km-long, 190-meter-wide ecological belt, featuring a large number of specially planted trees, has been built along the embankment. It provides protection from sandstorms, which has improved the local air quality, according to the Kaifeng forestry bureau.

## High-quality development

The adoption of effective measures with distinctive local features and advantages has seen environmental improvements in many regions along the Yellow River.

In Dongying, Shandong, where the river flows into Bohai Bay, the tourism sector is generating wealth.

For years, the local government has been reducing the number of pollutants flowing into the delta and conserving water to restore surface runoff — water that cannot be contained in the main body and flows over adjacent land — and supplement groundwater.

Now, the delta wetland is a prime habitat for plants and birds.

The number of avian species living on the wetland — including the oriental white stork, a rare migratory species — has risen from 283 to 368, while the total bird population has reached 3 million to 4 million, attracting large numbers of tourists.

Until recently, visitors from home and abroad made some 20 million trips to the delta every year, generating tourism revenue of 20 billion yuan in Dongying last year, according to statistics from the city government.

Li, from the CPPCC, said that while progress has been made on environmental protection and brought high-quality development to some regions, some challenges remain.

They include providing compensation for those who forgo economic activity to protect the environment and improving the working mechanism to coordinate activity along the upper, middle and lower reaches (of the Yellow River), because the ecosystem is an organic whole, she added.

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## Flood plain residents prepare for new lives in new homes

By ZHAO RUIXUE

As she whitewashed the walls of houses built on the plain alongside the Yellow River last month, Zhang Qiuju said she couldn't wait to move into her new home so she wouldn't have to worry about floods anymore.

She will realize that dream soon. In Jiucheng town, Shandong province, lines of new houses built on bases higher than the riverside plain are ready for habitation.

They were built by the local government for families who have lived on the plain for generations and whose lives have frequently been put at risk by flooding.

The riverside plain is the area between the Yellow River and the dikes, where the waterway floods and deposits silt.

About 600,000 people across Shandong live on this riverside plain. During the annual flood season, usually July and August, houses and farmland face the risk of floods that force people into poverty as a result of low crop yields and the high cost of repairing their homes.

"Before 1996 (a year before the Xiaolangdi Hydroelectric Power Project came into operation, reducing the frequency of floods), there were three floods in five years. Our house was flooded, so we repaired it, but it flooded again," said Li Zhongxue, a farmer in Jiucheng, who lives in a mud-and-brick dwelling.

## 600,000

number of people who live on the flood plain of the Yellow River in Shandong province

"It's not easy for us to move out of this area on our own. Where can we move to? What can we live on?" he said. He added that some people moved out of the village, but they quickly moved back because they were too far from the plain where they grew crops to make a living.

The 69-year-old is happy that the new village is just 2.5 kilometers from his old home. He comes to the site almost every day to look at the sturdy new houses.

"I want to move into my new home as soon as possible to start a better life where I don't need to worry about my family's safety," he said.

Wang Jian, Party secretary of Jiucheng, said: "Farmers used to build bases 1 or 2 meters high on which they set their houses to avoid floods, but the bases were not high enough when big floods occurred. The new bases in Jiucheng vary from 4 to 6 meters — high and solid enough to withstand floods."

Supported by subsidies from the provincial government, farmers can get new homes by spending 15,000 yuan (\$2,205) for 36 square meters per person. For example, Li, his wife and one of their grandchildren paid 45,000 yuan for a house of 108 square meters.

The local government has also built workshops, kindergartens, community service centers and schools. It is helping the farmers to plant easily cultivatable crops, such as okra, on the riverside plain so they can live better lives after they move.

Chen Gentian, of Zhulin village in Heze, is planning to plant 6 more hectares of okra next year.

"Okra planted on the plain is free from pollution. I can earn about 4,000 yuan each mu (0.06 hectares) by planting it," he said.

According to government statistics, the average annual incomes of people who live alongside the river at Heze, which has one of the largest populations on the plain, surpassed 10,000 yuan last year.

According to the Shandong government's plan, all 600,000 people on the riverside plain will reside in safe homes by the end of the year, thanks to measures such as moving residents away from the plain, constructing more bases for houses and building new dikes.