Daxing County's Water Gone Forever

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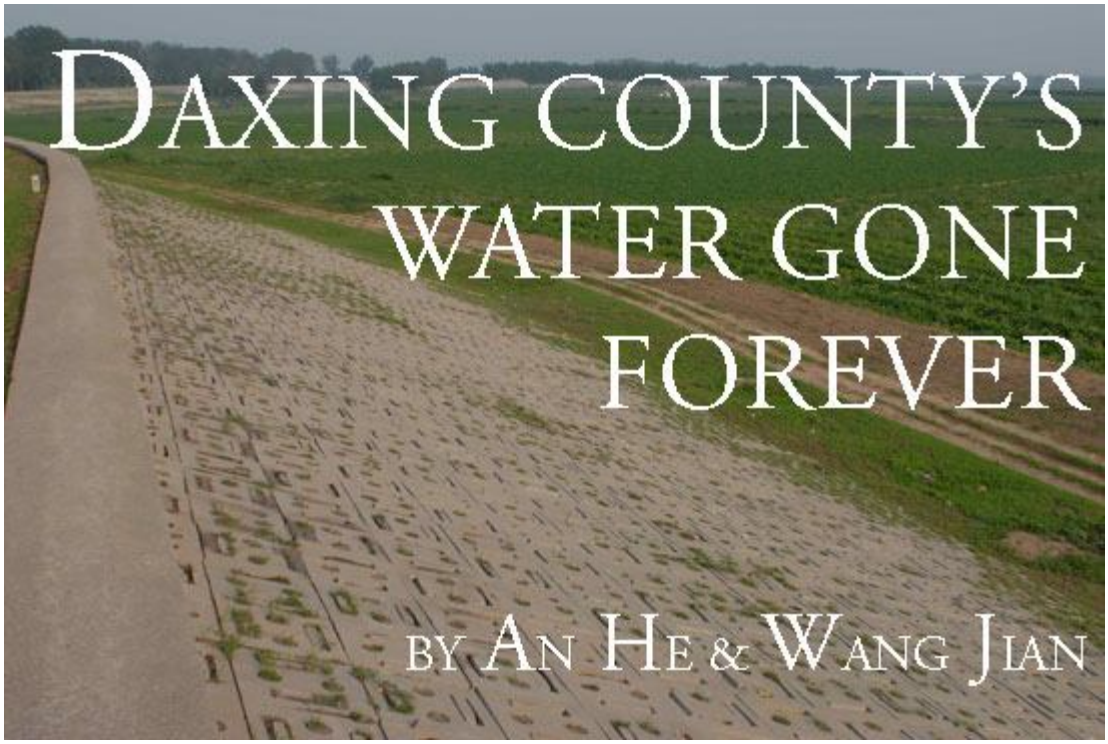

Below is the eleventh in a series of oral histories about Beijing water, as told to An He and Wang Jian by Li Zhenwe. Mr. Li is from Shahe Village in Daxing County and a former engineer at the water bureau in the Daxing County. You can download the pdf here.

Translation by Madeleine Ross and Fang Li

Li Zhenwen, male, 63 years old

I am from Shahe Village in Daxing County [fn] Beijing is comprised of 16 districts and two rural counties. Of the 16 districts, there are eight outlying suburban districts of which Daxing is one. It is located on the south side of the municipality and was upgraded from a county to a district by the State Council in 2001. See here, here and here[/fn]. When I was young, nearly half a century ago, the area of Daxing was full of water. Rain or snow fell year-round and all the villages had plenty of water. In those days, the peasants didn't like the rain because when it started, it never stopped, and this caused the buildings to collapse. I remember when I was eight or nine we lived in a mud house—there were no

bricks or tiles, and the walls and roof were made of mud. The first time it rained, the water came drip, drip, dripping through and when the rain continued to fall over the next two days, the walls became sodden. Then when we were asleep in the middle of the night, the house simply came crashing down. We had to wait until the rainy season was over before we could rebuild it. Homeowners even poorer than us had to rebuild every year. That year we were more meticulous in building the rammed-earth walls; we forced mud in between two planks of wood, and then pressed stalks of sorghum into it. Pressed into the mud and draped over the walls, the house looked like it was wearing a straw cape, but it worked: the rain flowed down the sorghum stalks without touching the walls. This was the cheapest way to protect our houses from rain; it was the same technique people used in prehistoric times.

We used well water when I was young. The wells weren't deep and, during the rainy periods, we could touch the water just by reaching down with our arms into the wells. The steps around the wells were built a little higher than the surface of the ground and we could stand up on the step, pick up a ladle and easily scoop up some water. In places where the ground was low and the mouth of the well wasn't properly made, the well would simply disappear from view when there was a deluge in the rainy season. People generally didn't drink from those wells, which were used for watering livestock. We drank water from wells dug in an elevated position.

Village wells tend to have water that is either sweet or brackish. No one can really guarantee what the water quality will be like before a well is dug. It was only possible to tell by tasting the water once it came up. Small villages usually had six or seven wells, while larger towns had up to twenty or so. As for choosing locations, wells were sunk close to courtyards to save time and energy carrying water. Some were put in by the village and some by private households, in which case they would be located at the edge of the yard.

At that time a lot of water flowed in the Yongding River and the river level was always quite high. To prevent flooding, houses were generally built on slightly higher ground. It was said that during the Yuan Dynasty (1271-1368 AD) there was a large breach in the river at the Lugou Bridge and that the water surged to Daxing. In the Ming (1368–1644 AD) and Qing (1644-1911 AD) dynasties, the river breached a number of times at different places.

The last time the river ran high was 1956. The largest embankments were unable to contain it and a breach occurred, which is still there, at Magezhuang Village. The water poured into the village and flowed onto Nangezhuang Village. According to my grandfather, the government used to raise the alarm to notify people of a rise in the water level beforehand so they could move. Villagers who lived near the Yongding River climbed onto its high embankments. The village organized a large cart and people with baskets to carry soil to reinforce the embankments. People built shacks and camped on top of the dykes in all directions.

What was the extent of the water during the 1956 flood? Well, in Shahe village, only the

tip of a mound, about ten or twenty meters wide, was not covered by the flood. Standing on the roof looking down, the village was totally submerged – all you could see was water, and fish were everywhere as well. The Yongding River flowed into the sea and some fish from the ocean even managed to swim upstream. Wherever there were hollows, there were fish. This village had a large pit that had never dried out and not many people fished there, so as soon as it rained it became full of fish. Even the ditches by the side of the roads were full of fish. There were even wild fish swimming all about.

Whenever there were floods, water from the Yongding River came coursing down and fish would swim upstream. In every hollow, fish a couple of hand spans long swam beneath the surface, so many in fact they couldn't all be caught in one throw of a net. When winter arrived, the ground was less waterlogged. The gullies by the side of the road were still full of water, but they had iced over. If you cut through the ice, put your hand in and felt around, there were still plenty of fish beneath. It was possible to grab one by just cracking open the ice. If you made a pocket at the edge of a piece of bamboo mesh spread on the bottom of a small stream, it would be teeming with fish when all the water had flowed away. Now, all of this has disappeared. Even the water is gone.

In those days all the children, young and old, knew how to swim, and the older people could too, so there were no deaths by drowning. When the late autumn rains arrived, the watermelons we had planted began floating, and to pick them, all we had to do was scoop them out of the water. We put them into the round shallow baskets we had brought with us and pushed them ahead of us while we walked through the water. We used the same baskets for collecting sweet potatoes. There is a saying that "rain comes in the sixth month" which refers to the lunar calendar. But the sixth month in the lunar calendar is really July and August in the solar calendar—that is when we experienced the most rain. In the seventh lunar month we had to dredge the water for peanuts and sweet potatoes. Villagers also waded into the river with bamboo strainers to pick out stalks of millet that filled the water. By the beginning of the Mid-Autumn Festival, in the eighth lunar month, the rain had stopped.

No one lived in the Haizi area, north of Daxing, which used to be the emperor's hunting grounds. Northwards from Nanda Hongmen, the Haizi area had its own wall to keep out commoners. The Yellow Pavilion at the large north gate was where the emperor rested on his way to the hunt, and the source of the Feng River was also there. Water gurgled out constantly from the spring at the emperor's lodge, Tuanhe Palace, and when we were planting rice during the Great Leap Forward (1958- 1961) [fn] A campaign launched by Mao Zedong, which aimed to use China's vast population to rapidly transform China from an agrarian economy into a modern communist society through industrialization. It ended in catastrophe, triggering a widespread famine that resulted in millions of deaths. [/fn] it was still there. In 1972, there was still a trickle of water next to a memorial plaque, but it wasn't gurgling any longer—and now it has totally dried up.

Daxing was originally an area of clay soil. And the sandy soil of my hometown, Shahe Village (Sandy River Village), was in fact silt that had been deposited during the Yuan Dynasty. I think the Yongding River must have run west from Nanzhang and then south

toward Baiyangdian before the Yuan Dynasty. In my hometown when people dug out their sweet potato cellars they found house foundations from the Yuan Dynasty and other things like woks and jars. I did some research and found that it had been a residential area, not a cemetery.

I started working in water conservancy training in 1964. There was a lot of water in the Yongding River then. The Guanting Reservoir was built in 1956, wasn't it?[fn] The Guanting reservoir is on the Yongding River. Construction of it began in October 1951 and finished in May 1954. It was the source of drinking water for tens of thousands of urban households until 1997 when it was declared too polluted. Today, it is virtually empty, and contains only 4% of the water it was built to store.[/fn] The Yongding irrigation canals were being dug until 1963 and water was channeled from Lugou Bridge straight to the Tiantang River. They were the kind of irrigation canals that were dug on top of embankments, a meter above ground level. In Daxing the topography was such that the northwest was high ground and the southeast was low. The large embankment was so wide that it had a road on it.

Water conservancy programs [fn] The authorities mobilized local people to participate in water projects called "water conservancy programs."[/fn] began in 1958 during the Great Leap Forward when an order came for us to dig new river courses. Until then, straight flowing rivers were never seen. Rivers were always winding this way and that. After the program began in 1958, the river courses were straightened little by little, with the result that the water flowed faster. If they hadn't been straightened the water would have run first into one embankment and then into another, always causing breaches.

Next came the "Waterways Network Program," also called, "Building south-like water villages in the north."[fn] This program intended to build villages in the North that were modeled after villages found in regions south of the Yangtze River.[/fn]. The program actually started in 1956, and it was supposed to enable "all the villages in the county to be linked up by boat" just as they were in the south. How would they link up? By digging canals. Many small sections of canal were dug all over the county, some had water in them, but others didn't, so there was no way of linking them in a network. Later on, people just filled them in again. We had worked for nothing. At the time, people worked without pay and ate for free. If we dug a canal to another village, we didn't have to pay for our meals. Socialism was like that.

It was probably around 1963 and 1964 that we planted paddy rice. In previous years there had been too much water and in nine years out of ten it always got waterlogged. From 1958, at the beginning of the Great Leap Forward, rice planting on large tracts of land began. The paddy rice in Daxing was good and the rice south of Daxing was even better. Ordinary people didn't have to pay for water unless they engaged in large-scale rice planting, in which case they had to pay for irrigation. How much were water charges for a mu (1/15 ha) of land? It varied depending on how often land was irrigated. Fields close to the village or ones that used a lot of water paid more, while fields further away or those that used less water paid less. At that time the water charges on one mu of land were only a few yuan a year. When the sluice gates were opened to allow the water to flow, they

were opened right up so that the Sanjiadian electric power plant could generate electricity. The municipality allocated any leftover water to the ordinary people for irrigation.

The droughts started in 1972. By about 1978 there was essentially no groundwater left. So, for rice planting, we began using motorized pumped wells. As a result, dry seeding became common. Perhaps you haven't heard of dry seeding. It's where seeds are planted in the ground, irrigated with pumped well water until the shoots appear, after which time, the farmer waters only with rain. This is 'dry rice' and the government gave farmers dry rice to plant. A few years later, the farmers stopped planting dry rice because there wasn't even enough water available to guarantee that the seeds would sprout.

Now wheat and corn is grown in Daxing. In summer the corn leaves all droop, only picking themselves up a little at night. Watermelon is grown in Panggezhuang Village.[fn] Panggezhuang Village was famous for its watermelons.[/fn] There are also a lot of peanuts in Daxing. Now everything must be covered with plastic sheeting, to prevent evaporation and to help crops grow faster.

In 1978, the government called on everyone to conserve water, and the use of sprinkler irrigation began, which I heard was something learned in Shandong Province. Originally it was a couple of experts from America, a husband and wife team called Han Chun (Joan Hinton) and Yang Zao (Erwin Engst), who advocated sprinkler irrigation. [fn] Joan Hinton (Chinese name: Han Chun; born 20 October 1921) was a nuclear physicist and one of the few women who worked for the Manhattan Project in Los Alamos. She lived in China since 1949, where she and her husband Erwin (Sid) Engst participated in China's efforts to develop a socialist economy, working extensively in agriculture. She died on June 8, 2010. See this article. [/fn] Western countries were all using it. There are two kinds of sprinkler irrigation, one is fixed with below-ground tubing, the kind often used to water lawns and flowers in parks; the other kind is moveable and has nozzles fitted to the back of a tractor. It uses water pumped out of rivers and underground reservoirs.

How could water be retained in canals? The irrigation canals were lined with cement panels all the way from the Yongding River. There was no artificial rain[fn] Rain can be induced by flying through clouds and spreading a combination of silver, sodium and acetone. See this item about cloud seeding in Morocco. China has also used cloud seeding recently to induce precipitation in the southwest provinces which have been suffering from drought.[/fn] in this area. But there was a hail prevention system. For example, we saw the military using mortar shells on the Yongding River embankments at Panggezhuang Village for this purpose.

Either piped or sprinkler irrigation was used. Villages tend to have 200 or 300 millimeter concrete pipes buried underground with water outlets on the surface. When the piping is laid, underground water is pumped up and the water outlets are opened. There is no evaporation and the water goes straight into the ground. But using this method, water is still wasted because when the water comes to the surface it is, in effect, flood irrigation. It

has since been changed to sprinkler or drip irrigation. All of this was what Han Chun and Yan Zao taught us. This irrigation system is best suited to pear trees. The irrigation system we designed for the pear trees had four nozzles for each small tree which leaked water, drip, drip, drip, while everywhere else it is dry. It's the most water efficient way to do it.

Ordinary people all have hoses to do their watering now, the same kind that the fire brigade uses, and when they are finished watering, they drag the hoses back home. Lixian is a vegetable-growing area with running water in their large covered sheds. The main crop in Panggezhuang Village is watermelons. Fruit is grown on the edge of the Yongding River. In my hometown we have started planting mulberry trees. Do you know that there was a "Mulberry Festival" recently?

The Water Control Bureau in Daxing manages water for the entire county and in future we will have to pay for the water we use. All our running water here in Daxing—which comes from our own wells…we don't use water from the Beijing waterworks—goes through filtration after being pumped up and its quality is guaranteed.

The water we are currently using comes from the Daxing Number Two Waterworks, not from the Beijing waterworks. To supply enough water for the local water plant (Daxing Number Two Waterworks), more than 20 wells have been dug, with an average depth of 300 meters. The water in Daxing is hard and has a lot of scales[fn] An alkali or base that dissolves in water.[/fn] because there is much less water than before—with the minerals and scales having sunk into the soil.

At Daxing, we also have hot springs, drilled out by oil drilling crews. They were originally looking for oil but found none—water came out instead. Analyzing its geology, Daxing should have oil around the Anding area. But when they realized that the oil reserves weren't very large they decided it wasn't worth extracting. And, meanwhile, after digging and discovering water, they had to cap the water; otherwise the groundwater would empty itself. I've bathed at Fengheying which has hot springs discovered by the Huabei oil prospecting team. They found hot springs, rather than oil, but no one bathes there and it gushes out uselessly.

When I started work, it was at Niantan Reservoir. But it hasn't had any water in it for a long time. People came to develop the area and built a road in the eastern section, and now they run kite-flying competitions, a golf course and things like that there.

Oh, you know, I am a native of Beijing! As I remember, it used to rain in all four seasons and there was an annual rainfall of 1000 millimeters, whereas now there wouldn't be more than a few hundred millimeters. I've heard that the South to North Water Diversion Project includes a small outlet for Daxing, in the west at Beicheng Village. When the water comes from the south do you think that they will give us a little?

An He is a Beijing-based engineer. Wang Jian is a Beijing-based water expert.

Beijing, once famous for its sweet spring water and clear-flowing rivers is now infamous for its polluted canals and dried up riverbeds. My Home and Water: A People's Account provides a rare uncensored glimpse of life and water in the ancient capital of Beijing and surrounding areas – as told by longtime residents.

Translation, editing and online publication of the series by Chinese author Dai Qing and Probe International has been made possible by funding from the Foundation Open Society Institute (Zug). For more information, contact Probe International at info@probeinternational.org

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