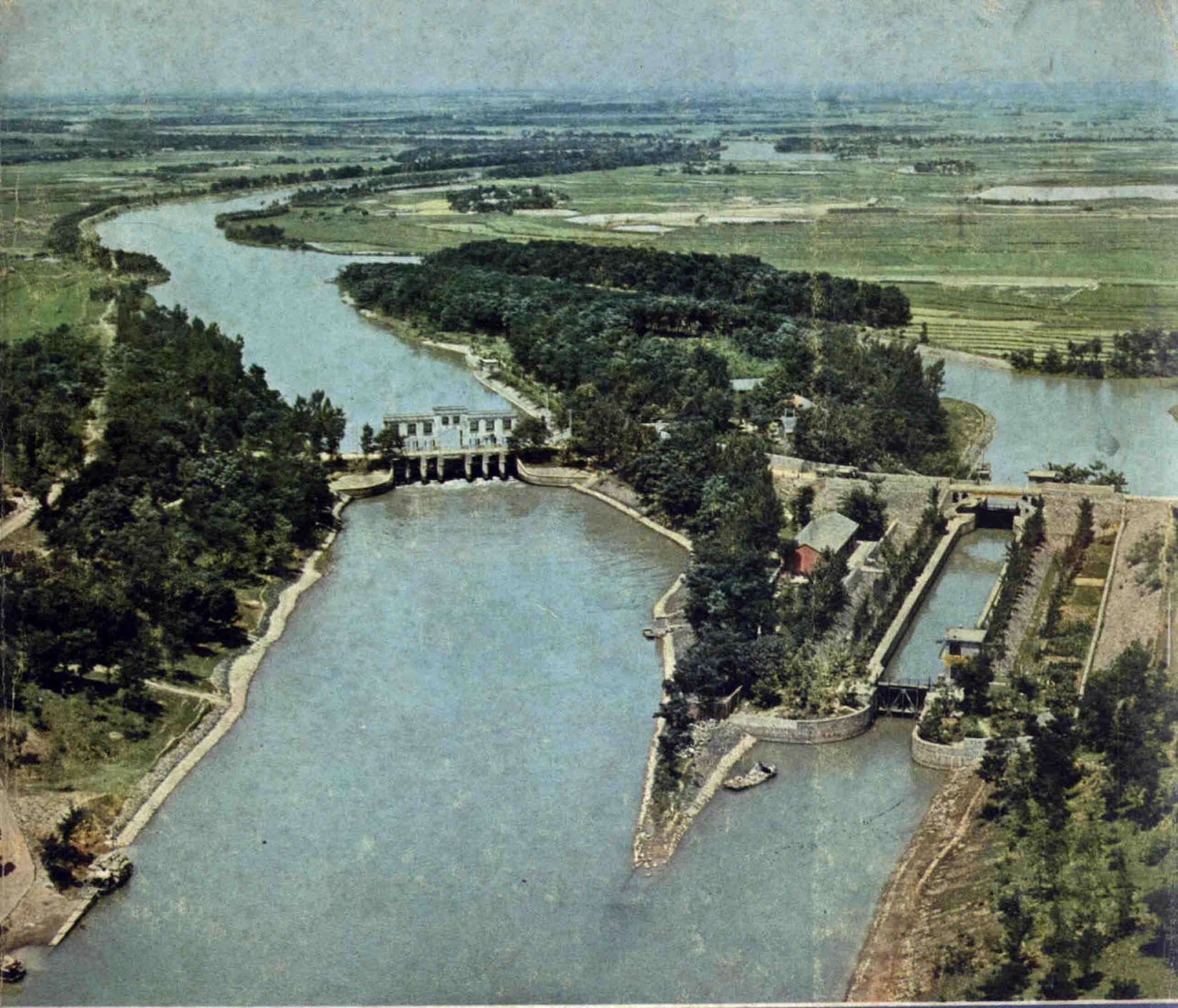

A HILL REGION TRANSFORMED

Introducing the Pi-Shih-Hang Irrigation System

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Foreword

SITUATED between the Yangtze and Huai rivers, the northeastern section of the Tapieh range, whose main body lies on the borders of Hupeh, Honan and Anhwei provinces, is marked by vast expanses of rolling hills. Over many years, the hard-working people there cut new river courses over 13,000 square km. of land, succeeding in self-reliantly building China's largest farmland irrigation project, the Pi-Shih-Hang irrigation system.

Involving the Shihho, Piho and Hangpu river basins, this irrigation system embraces nine counties and one city in Anhwei, and two counties in Honan. It irrigates 795,000 hectares of land, which feature a network of canals and ditches, ponds and weirs as well as aqueducts that bring the life-giving water to fields green with crops. The million local inhabitants are now happy to be building their socialist countryside, never forgetting how they were constantly menaced by drought and other natural calamities in the sad past.

YEARS OF SUFFERING

THREE fairly large rivers flow through this expanse of hilly region. The Shihho and Piho flow southwest-northeast into the Huai which cuts across Anhwei Province in the north; the Hangpu flows west-east into Chaohu Lake which empties into the Yangtze to the south. The currents are swift and, in the past, a downpour would form mountain torrents which washed away houses and flooded the land. In the dry season, the water flowed away 20-30 metres below the cultivated land on the ridges. What's more, this region was adversely affected by air currents from both north and central China, those from the

former tending to bring long periods of drought and those from the latter tending to usher in a long rainy season and flood. Historical data show that in the 278 years before liberation natural calamities, mainly drought, occurred 134 times.

In time of drought, far from lightening the people's burden, the local officials increased taxation and extortion while the landlords and local despots took this chance to get rich. They controlled water sources by locking up wells and stationing armed guards there so as to fleece the people. Peasants who did not give money or other gifts were denied water. In a drought in 1944 the peasants in a village on the lower Hangpu River handed over to the landlords a total of 9,000 kg. of rice for permission to use water for seven days. Fields became parched and many peasants fled, leaving vast stretches of farmland desolate and without human habitation. The miserable situation is described in a county almanac of the time: "A thousand square li of parched land, not a grain of rice reaped, a thousand cash for a cup of water, refugees wandering by the road," and "Six out of ten died. Many whole families were wiped out, leaving nobody to bury them!"

Such place names as "Death Weir" remind one of those tragic times. Here, the peasants fought drought with wooden water-wheels, drawing scoopfuls of water from the river onto the thirsty fields. Toiling day and night, no few died of exhaustion near the weirs. At "Perished Chicken," trees and chickens died of parching and thirst. "Gruel Hamlet" indicates the standard diet of the inhabitants due to famine almost every year. And "Tuberculosis Village," and. . . . Still circulating among the people, these horribly suggestive names incorporating the labouring people's blood and tears stand as condem-

nation of the cruel reactionary ruling classes, and give a measure of the merciless natural calamities.

In 1929, the working people of the Tapieh Mountains area began armed struggle under the leadership of the Chinese Communist Party, and this disaster-ridden region became a revolutionary base. Two years later, when a severe drought occurred, the armymen and people got organized to fight the inclement weather. They also built an earthen dam to block the Shihho River waters for irrigation purposes. While celebrating their good harvest that year, the people realized that only by uprooting the old social system — overthrowing imperialism, feudalism and bureaucrat-capitalism — could they take their future into their own hands and control nature.

In 1951, the second year after the birth of the new China, the Chinese people's great leader and teacher Chairman Mao Tsetung issued the call: "The Huai River must be harnessed."

The Huai is one of the major rivers in China. In 1938 the Kuomintang reactionaries sought to cut off the pursuing Japanese invaders by opening the south dyke of the Yellow River near Chengchow in Honan Province. Its waters raced south into the Huai, raising its bed with silt. After that its middle and lower reaches were flooded during the rainy season, and it became known as one of China's sorrows.

As Chairman Mao's call was widely circulated among the disaster-stricken people along the Huai River, thousands upon thousands went to the worksite to build dykes and reservoirs along the river and in the hills. In a few years four large reservoirs, the Meishan, Hsianghungtien, Fotzuling and Motzutan, were completed on the upper reaches of the Shihho and Piho rivers, two of the Huai's main tributaries, with a total storage capacity

of 5,800 million cubic metres. These have served to halt the mountain torrents, reduce the flood threat to the people on the lower reaches and supply water to irrigate fields upstream.

PEOPLE'S COMMUNES ARE FINE

AT the time when the Fotzuling Reservoir was built on the upper Piho, people had visualized drawing water from it to irrigate the hilly land around. But dream was far from reality. To carve out a canal required a lot of labour power, and to encroach on a piece of land also posed a problem: Who would the work benefit? How great would it be, and how soon? To an agricultural producers' co-operative, even of the advanced type, with about 100 households, the project presented insurmountable difficulties. The irrigation plan for over 10,000 hectares of farmland could not be realized under the existing co-operative set-up.

In 1958, to meet the needs of agricultural development, people's communes were set up in China's vast countryside on the basis of the advanced co-operatives. That September 16, Chairman Mao visited the Pi-Shih-Hang irrigation area on inspection. He declared: "People's communes are fine!"

Compared with the advanced co-operative, the people's commune is larger in organization, more collectivized and thus more capable of coping with natural calamities, reshaping mountains and rivers and expanding production. It has showed its vitality from its first days. The people's communes in the Shihho and Piho basins jointly sought per-

mission to dredge rivers and dig canals. They set their minds on using the reservoirs to develop irrigation and combat drought. In the Hangpu basin, too, every commune petitioned to build dams and reservoirs to store water for irrigation.

On September 21, 1958, the Pi-Shih-Hang water conservancy project was launched in its entirety. Hundreds of thousands of enthusiastic commune members marched to the worksite in the early morning sunshine.

WORKING HARD FOR A BETTER FUTURE

THE hilly region between the Yangtze and the Huai was topographically complex while the Pi-Shih-Hang project was quite large in scale. When work began in 1958, rapid achievements were being made in every aspect of the country's activity. There was a great demand for construction materials and equipment. The new China, then nine years old, could not yet fully supply what the project needed. There were also many other problems. But the local people preferred surmounting these difficulties through hard work to waiting passively for state help.

The first difficulty was lack of technically trained people. The whole worksite had only 24 engineering staff and technicians plus a surveying team of 69 members, who spent half a month surveying only half the length of a projected canal. It would take years to complete the survey of the numerous canals planned.

The worksite Party committee asked the various participating communes to recommend people to learn and do the surveying. More than 1,500 youngsters were chosen.

Born and brought up in the area, they were familiar with the local terrain and water systems. They went through a short period of training and then began work under the guidance of experts. Learning while working, they completed the survey of the selected routes for the entire project in a mere four months.

In excavating the main trunk canals, hills had to be split and gullies filled in. As the greater part of the soil there was hard, work was slow. Meetings were called and suggestions offered. After some trials, the method was adopted of digging a deep ditch, driving a row of wooden wedges on each of the sloping sides and then having a group of workers prise up the wedges. Chunks of earth were dislodged one after another, so that the excavation went on dozens of times more quickly.

Pingkang Ridge, 90 metres high, stood on the route of the Shihho Main Trunk Canal and needed blasting out, though home-made dynamite failed to do the job. The Party committee of Huochiu County, which was in charge of the work there, called a cadre meeting which decided to enlist the help of the peasant builders. Recalling the bitterness they suffered in the old society, the rank and file expressed their determination to overcome the difficulty. It was revealed that, of the 1,070 builders on that worksite, 397 had sold children so that the children and themselves could go on living, and 351 had at least one family member who starved to death in the famine year of 1928. Tearfully contrasting their tragic past with the present good living, they were inspired to solve the blasting problem and so contribute to the building of socialism.

A blasting team was organized comprising 12 demobilized People's Liberation Army men and Communist Party members. They studied the problem carefully and devised a method they called the "cave-type explosion." They dug dozens of shafts through several

metres of rock, joined them at the bottom with a horizontal alley and planted 5,000 kg. of explosives there. Then all were set off simultaneously, splitting the ridge midway and opening the way for the main trunk canal to be built.

The overall project had 96 places like Pingkang Ridge, all higher than 10 metres. There were 48 places where rock and earth had to be transported to fill in gullies more than 10 metres deep.

The rock and earth thrown up by dynamiting — about three million cubic metres of it at Pingkang Ridge alone — had to be removed and taken where needed, apart from the transport of other material. Using 10,000 trucks each making 10 trips a day, it would take at least a couple of years to complete the job. To solve this problem, experienced peasant workers put their heads together and came up with a number of methods, among which they selected the "pulley and rope." A pulley with one end of a long rope attached to it was fixed on the slope. The other end of the rope was fastened to a cart at the foot of the slope. One man pushed the cart upwards while another at the other end pulled it downwards. In this way they could bring a loaded cart weighing 200 kg. to the top of the slope very quickly.

These three simple but effective methods were called the "three treasures" on the worksite of the Pi-Shih-Hang project. A still greater treasure was, of course, the revolutionary will, wisdom and skill the masses displayed in building socialism.

PROJECT OF HAPPINESS FOR POSTERITY

THE Pi-Shih-Hang project required enormous quantities of materials, such as dynamite for blasting open the hills and cement for building dams and sluices. Asking as little as possible from the state, the local people undertook their production by indigenous methods. When timber was needed, the commune members supplied 10,000 cubic metres together with 220,000 trees.

Why were they so enthusiastic? Because, under Chairman Mao's leadership, they saw the Pi-Shih-Hang project as one of happiness for posterity.

To do their part, the leading comrades joined the masses on the worksite, doing such work as pulling and pushing the heavily laden carts. The engineers and technicians did careful on-the-spot study and investigation so that labour and materials were economized while ensuring quality and good results. Ten thousand blacksmiths and carpenters worked round the clock on the worksite, making and repairing tools. Department store counters, grocery and grain shops were set up there. Doctors and cultural workers came to give medical care or performances. Red-scarved Young Pioneers helped in machine shops after class. Women whose work in the home was lightened by the people's commune also turned out on the worksite, 100,000 taking part in the first year, some of them undertaking major projects. The "Women's Battalion" of 640 members included 143 former child-brides and 23 former bondmaids. Subjected before liberation to the domination of four systems of authority (political, religious, clan and the husband), these women now regained their youth and vigour. They drilled blast holes, placed and lit explosives like the

men, while those on excavation went at it with a will. Women remaining in their villages worked in the fields and also delivered provisions to the worksite, their line of fully loaded carts and wheel-barrows reminding one of the popular support to the PLA in the latter's drive south to liberate the whole country early in 1949.

Some statistics on the Pi-Shih-Hang project up to 1976:

The number of people taking part each winter-spring period, 200,000 to 800,000.

The amount of work done in the dozen years and more since 1958:

13 main trunk canals and other trunk canals totalling 1,000 km. in length, each irrigating upwards of 20,000 hectares of land;

358 branch and subsidiary canals totalling 3,900 km. in length, each irrigating upwards of 700 hectares;

more than 80,000 smaller canals totalling 40,000 km. in length, each irrigating not less than 600 hectares;

more than 30,000 aqueducts, inverted siphon works, culverts, sluices and dams;

more than 940 reservoirs each storing 100,000 to 100 million cubic metres of water;

more than 200,000 ponds, weirs and other water reserves;

808 million cubic metres of stone and earth work.

Now completed, the three key headworks discharge a total of 46.31 million cubic metres of water into the irrigated area where three quarters of the farmland are served by gravitational irrigation while the remaining small, scattered plots higher up are watered by hundreds of electrically operated pumping stations.

Today, the area covered by the Pi-Shih-Hang irrigation system is an inspiring scene. The drought menace has been overcome and average grain production has risen from

1,500 to over 3,750 kg. per hectare. Power stations along the canals generate electricity for village lights and use by small factories. A network of boat transport on the waterways has been formed. The once poor hilly region now vies in prosperity with the well-watered country south of the Yangtze.

What the Pi-Shih-Hang project means to the local people can be seen from their song:

Water of happiness rolls by,
Washing worries away.
Felicity flows in,
Forever to stay.

UNITY FOR RIVER CONTROL

THE people on the lower reaches joined those upstream for the early phase of the work, the latter receiving immediate benefit from the project. Then, to benefit those downstream, they continued working together for over a decade. The barriers between communes and counties, upper and lower reaches, were broken. Regardless of the extent or the time of receiving the benefit, all co-operated on equal terms.

More than 20,000 peasant workers of Luchiang County went to the Yuchiaho worksite in Shucheng County to fill in gullies for building the Shulu Trunk Canal in the Hangpu River basin. Before tents could be set up, members of the local Shucha People's Commune had prepared rooms for them in their homes and invited them in. The work involved 150,000 cubic metres of earth. As originally planned, the earth needed might

be obtained from farmland nearby. But the Luchiang peasants preferred going the distance necessary to get earth from a barren river flat to taking it from commune land. This fine spirit moved the Shucha people, who insisted that the earth be taken from their fields. The peasant workers finally agreed, but took as little as possible and later levelled the land for future crops.

Such profound class feeling and new ideas and style reminded people of the situation in the old society. The landlords, who monopolized water and used clan relationships and parochialism, instigated antagonisms and feuds among peasants of different villages and peasants living upstream and downstream. In the 10 years before the liberation of Lochi township (now seat of Fenshui People's Commune) of Honan's Kushih County in the Shihho River basin, 74 people died in armed clashes over water. Comradeship now prevails, and former foes have become kin in the big family of the people's commune.

In this concerted battle to utilize the water resources, the people in the irrigation area dug the South, Chuho and Shulu trunk canals. Thus the waters of the three rivers are led to Honan's Kushih and Shangcheng counties in the west, Patou Commune of Anhwei's Feitung County in the east which, located 250 km. downstream, serves as the watershed between the Yangtze and Huai rivers, and onto the shores of Chaohu Lake.

The subsequent building of the Hangpi Trunk Canal and the necessary aqueducts provide channels for the Lunghokou Reservoir waters in the Yangtze system to join those of the Piho Main Trunk Canal in the Huai system. The local people say: "Every section of the sprawling canal network is the result of our common struggle, of communist cooperation."