

Harm into Benefit

Taming the Haiho River



Harm into Benefit

— Taming the Haiho River

Ho Chin

FOREIGN LANGUAGES PRESS
PEKING 1975

OCTOBER BOOKS
4B TEMPLE COURT
LIVERPOOL 2
A C.P.B.M.L. BOOKSHOP

Harm into Benefit

— Treating the Yellow River

Ho Chi

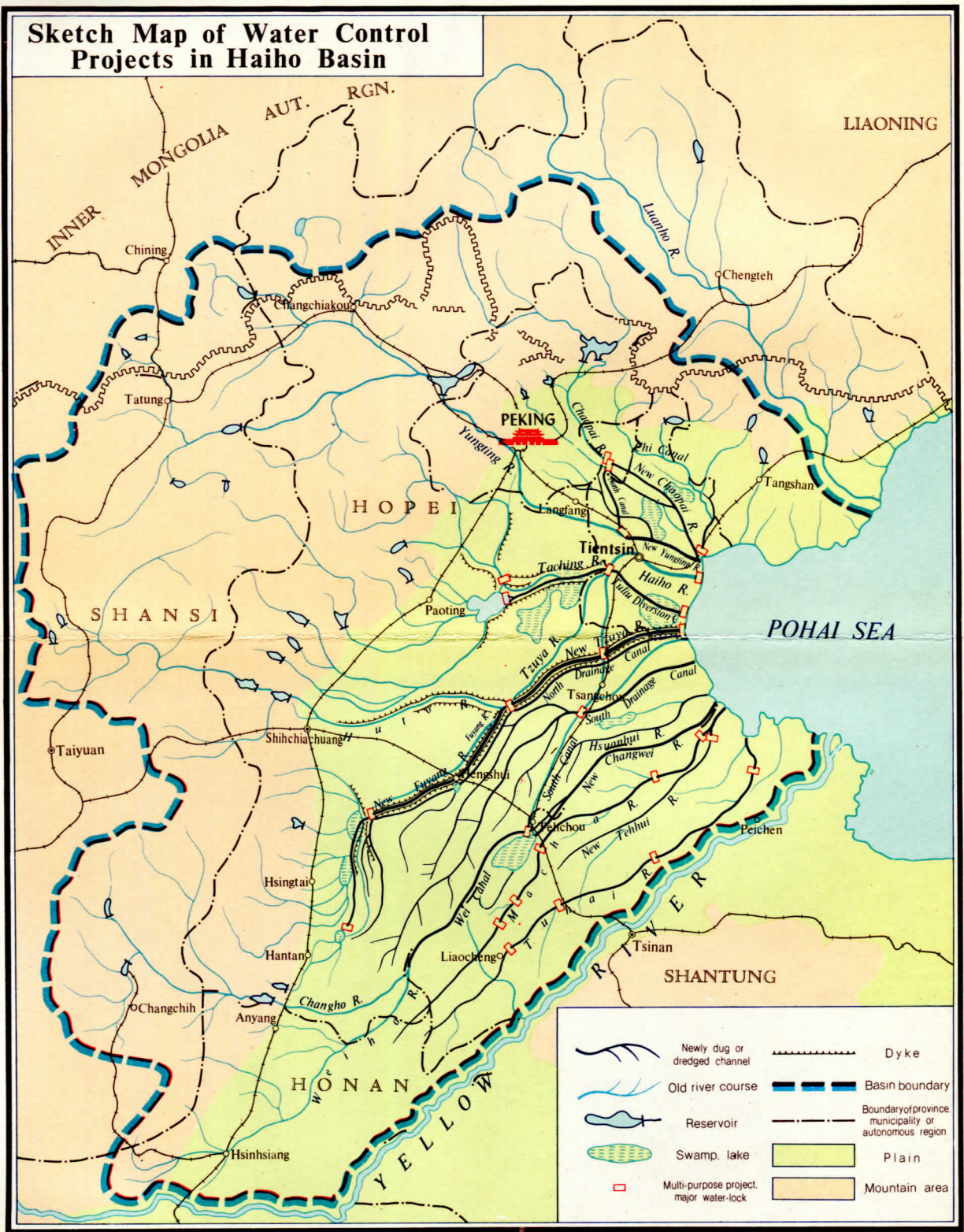


一定要
根治
黄河
毛泽东
一九五二年十月十日

Printed in the People's Republic of China

Chairman Mao studying the map of the Haiho basin.
(Inscription: **The Haiho River must be brought under permanent control!**
Mao Tsetung, November 17, 1963)

Sketch Map of Water Control Projects in Haiho Basin



Contents

The Old Haiho River	1
The Great Call	8
A Million "Foolish Old Men" Battle the Haiho	17
Building Up Mountain Areas by Re-arranging Mountains and Rivers	42
Extensive Land Reclamation	50
Tapping Ground Water Sources	57
The Haiho River's New Look	62

The Old Haiho River

North China's Haiho River has its source in the Taihang and Yenshan mountains and empties into the Pohai Bay at Taku. It is fed by 300 tributaries and five rivers (South and North canals, the Tzuya, the Taching and the Yungting) and is called the Haiho from the convergence of the five rivers near Tientsin. Together with its tributaries it fans out over north China as an extensive water network known as the Haiho River system. Closely linked with South Canal and therefore included in this system are also the Tuhai and Machia rivers, though they flow independently into the sea.

The Haiho basin extends from the Taihang Mountains in the west to the Pohai Sea in the east, crosses the Yenshan Mountains in the north and borders the Yellow River in the south. The greater part of Hopei Province is drained by the Haiho system and forms more than half of the basin. Peking, China's capital, and Tientsin, a major industrial city, are located in this basin as are northern Shantung Province and parts of Shansi and Honan provinces and the Inner Mongolia Autonomous Region. The total area of the basin is 265,000 square kilometres, roughly half and half moun-

tainous and plain, with a population of over 70 million. Its cultivated area is 180 million *mu*.¹

The Haiho basin features rich soil, abundant natural resources and well-developed communications. The central and southern parts are broad plains—important grain and cotton areas. To the east is the sea coast rich in fish and salt, while to the west and north are mountain regions abounding in mineral deposits. Railway, highway and water courses afford convenient transport throughout the area. Linking the country's north and south are the Peking-Canton, Peking-Shanghai, Peking-Chengteh and Tientsin-Chih sien rail lines. The Peking-Shanhaikuan, Peking-Paotow, Shihchiachuang-Tehchou and Shihchiachuang-Taiyuan lines connect east and west.

But, old China's history is filled with grave natural calamities throughout the Haiho basin. Frequent floods, waterlogging and drought made the river one of China's sorrows.

In mountainous upper reaches the many tributaries were short and swift with abrupt drops. On the plains of the middle and lower reaches the water slowed down, depositing silt in the river beds and raising them to form "elevated rivers." That is, the river level was above ground level, with dykes containing the water. Their narrow courses and few small outlets to the sea created a difference of from scores of times to one or two hundred times in discharging capacity between the upper and lower reaches. The basin has its own climate. Annual rainfall is unevenly distributed, the wet season being around July and August when 60-70 per cent of the year's total rain falls. Heavy rains in the moun-

¹One *mu* is equivalent to 1/15 hectare or 1/6 acre.

tainous upper reaches often brought down silt-laden floodwaters which the lower reaches could not promptly discharge and which breached dykes and flooded the surrounding areas. In spring, wind and lack of rain resulted in water shortage. Rivers disappeared, wells dried up and there was serious drought. History records that in the 580 years between 1368 and 1948 floods ravaged the basin 387 times and drought 407 times. Tientsin was under water more than 70 times, each major flood affecting over 100 counties. Not infrequently flood and drought alternated. The low-lying areas were turned into alkaline wastes by waterlogging over the years. One such alkaline waste, the Heilungkang area¹ which occupies a third of the province's cultivated land, was described by the local people in the following verse:

*In spring the ground's frosted with soda,
In summer we can't see it for water.
No plant will ever grow,
No matter how we sow.*

Though the woes brought on the people by the Haiho were natural calamities, it was the society that was mostly to blame. Ruthlessly exploited and oppressed by old reactionary ruling classes, particularly by the imperialists and Kuomintang reactionaries, China's working people lived miserably. They had no way of fighting natural calamities with water conservancy projects, for

¹The Heilungkang area is situated in southeastern Hopei Province, on the middle and lower reaches of the Haiho. It includes the Tsangchou and Hengshui regions (a province is divided into regions and a region into counties), southern Tientsin region, eastern Hsingtai and Hantan regions and Chinghai County of Tientsin Municipality—altogether 47 counties and cities.

the reactionary ruling classes knew nothing but to tax and fleece the people, never giving a thought to their welfare. The river courses and dykes along the Haiho basin were for long years out of repair and calamities became worse and worse.

The reactionary rulers claimed that they wanted to "fix the river," but any of their attempts at conservancy work were purely with the aim of prolonging their reactionary rule and corrupt way of life. The Yungting River, for example, once known as "Wuting" ("no fixed course"), had threatened many times to inundate Peking. In 1698, to protect the imperial palaces, the Ching emperor Kang Hsi (1662-1722) conscripted a large labour force and, using money extorted from the people, had a stone dyke built on the Peking side of the river. At the same time, in a show of concern for the people, he ordered an inferior-quality earth dyke built on the other side of the river and changed its name to "Yungting" ("forever fixed"). The river continued to overflow its banks. In 1890 heavy rains swelled the Yungting and Taching rivers so that they breached their dykes and again caused flood and waterlogging around Peking. It was the working people who really suffered. Historical records describe that year's flood in these terms: "A vast sea for hundreds of kilometres," "large numbers of people and livestock dead; the autumn crops completely washed out." Such was the result of the reactionary rulers' "river control."

And this was only one of the innumerable cases of the reactionary ruling classes making their fortunes by fleecing the working people under the pretext of "river control" or otherwise taking advantage of flood and drought situations. In July 1939 floodwaters rushed

down from the Taihang Mountains, causing the Yungting, Taching and Tzuya rivers to overflow or breach their dykes. The Peking-Hankow and Tientsin-Pukow railway lines were cut and 50 million *mu* of farmland was submerged. In the two months when Tientsin was flooded the capitalists raised the prices of grain, fuel and other necessities five or six fold, with prices going up several times a day. The reactionary authorities of Chinghai County, Hopei Province, extorted 160,000 yuan and more than 8,000 piculs of grain from the people of the county ostensibly for repairing a dyke which was actually never repaired. The flood raged on as the money and grain flowed into the pockets of the officials. Tens of thousands of houses collapsed and some 20,000 people drowned or died of hunger or exposure. Survivors were swindled by the landlords and capitalists, one capitalist taking 300 *mu* of farmland from flood refugees in exchange for a boatload of grain husks from Tientsin.

In pre-liberation China, weighed down by imperialism, feudalism and bureaucrat-capitalism, the working people living in the Haiho basin had the same hard life as their counterparts throughout the country. They were victims of both man-made and natural calamities. History tells of their tragic suffering or succumbing to flood disaster.

Flood swept 104 counties of Hopei Province in 1917, affecting an area of 35,800 square kilometres and a population of 6.2 million. Nearly 20,000 villages had houses collapse. Of the 27 peasant houses in Tungchao Village, Chiaoho County, only the house owned by a rich peasant, together with his ox, survived the calamity. It became known as "one-ox village," for the members

of all other households either died or fled the stricken area.

In the 1920 drought, rivers in Hopei became trickles, water holes, ponds and lakes dried up and nothing could be grown on most of the farmland in 97 counties. For hundreds of miles around there was no cultivation. Refugees ate bark and grass roots and countless died of starvation. In the 600 villages around Hsingtai County alone over 11,000 people starved to death.

Every flood or drought caused the break-up by death or separation of countless poor and lower-middle peasant families. When flood ravaged Fuchuang Village of Hsienhsien County during the reactionary rule of the Chiang Kai-shek Kuomintang, poor peasant Liu Chu and his wife fled with their five children only to find similarly stricken areas wherever they went. They could get nothing to eat by begging. They sold one of their little daughters, but the money they got for her bought only enough grain to last them a few days. Finally they sold three more girls one after another. Even so Liu Chu died of hunger not long afterwards. His wife could do nothing but sell her one remaining child and marry again. This story of poor peasant Liu Chu's family is only one of thousands from the old society.

The history of the Haiho basin before liberation was one of catastrophe, of the working people's blood and tears, and of the reactionary ruling classes' crimes. The working people there longed for the removal of the three big mountains of imperialism, feudalism and bureaucrat-capitalism and for the permanent control of the Haiho River. They wanted to get rid of the area's poverty and backwardness. A folk song describes the

old situation and expresses the aspirations of the stricken working people.

*The Haiho River, ah, it is long,
At mention of it the people's anger rises.
Spelling tragedy nine years in ten,
It sends tens of thousands fleeing disaster.
Shouting "river control"
Officials exact taxes and levies fiercer than the
flood.
Where is the end of the tears of the poor?
Longing for the day when the sun will rise in
the east.*

The Great Call

"Only socialism can save China." After the founding of the People's Republic of China the dream of the people living in the Haiho basin to control the river came true. Led by our great leader Chairman Mao Tsetung, the Chinese Communist Party and the People's Government, and on the basis of the progress in socialist revolution and socialist construction, the planned control of the Haiho River system began.

During the period of rehabilitating the national economy (1949-52) attention was centred on flood-prevention projects, since flood was the greatest immediate harm. Dyke repair, long neglected in the old society, was first done. Channels in the middle and lower reaches of the Chaopai and Yungting rivers were dredged. A number of flood-diversion canals and drainage ditches were dug. Kuanting, the first large reservoir in the Haiho basin, was completed on the upper reaches of the Yungting River.

During the period of the first two five-year plans for socialist construction (1953-57 and 1958-62) extensive study and investigations were carried out on the topography, geology, soil, climate and hydrology of the Haiho basin and a wealth of data collected. A preliminary plan for harnessing the Haiho was made according to the

principle of combining permanent with temporary solutions to prevent flood, drought and waterlogging. During this period agricultural collectivization was realized in China's countryside and, particularly in 1958, with the Great Leap Forward, people's communes were set up. Water conservancy work on a mass scale began in the Haiho basin by relying on the strength of the communes' collective economy. By 1963 reservoirs had been built on most of the larger tributaries in the Haiho's upper reaches, 18 of large size with a holding capacity of more than 100 million cubic metres.¹ They have played a major role in regulating floodwaters from the mountains. In the lower reaches diversion canals (sometimes called *hsinho*, or new rivers, by the local people) were dug, river courses dredged and dykes reinforced so that their capacity to drain water into the sea more than doubled that of pre-liberation years. In many places the people were mobilized to dig ditches and wells that doubled the irrigated area of the basin compared with the early years of the People's Republic. The achievement in water conservancy in the first dozen years after liberation amply demonstrated the superiority of the socialist system.

The various projects undertaken in those years did a great deal towards preventing and controlling flood, waterlogging, drought and soil alkalization. But further work of widening the course on the middle and lower reaches and improving the few outlets to the sea, which were small and silted up, were yet to be done. In

¹ Reservoirs are classified according to their holding capacity: large size with a capacity of more than 100 million cubic metres, medium size from 10 to 100 million and small size less than 10 million.

August 1963 the century's heaviest rains in the eastern foothills of the Taihang Mountains caused flood to sweep down, swelling the Changwei, Tzuya and Taching rivers. The total volume of waterflow nearly doubled that of 1939. The ten large reservoirs on the upper reaches of these rivers contained nearly half of the water there. But the peak flow into the rivers on the plains was 78,000 cubic metres per second, inundating large areas of farmland in Hopei Province and threatening the city of Tientsin and the Tientsin-Pukow Railway. The devastation would have been inconceivable had it happened before liberation. But in socialist new China, with the concern of Chairman Mao and the Party Central Committee and wide support from the people and the People's Liberation Army, the people of Hopei Province, Tientsin Municipality and northern Shantung fought the flood heroically, protecting Tientsin and the Tientsin-Pukow Railway from the flood disaster.

After defeating the extraordinary flood of 1963 the people in the Haiho area urged that the river be permanently controlled, and on November 17 of that year Chairman Mao issued the great call: **"The Haiho River must be brought under permanent control!"**

This incisive instruction was just what the people had been waiting for. It gave the guidelines for eliminating the flood menace and undertaking conservancy projects to change the situation of agricultural production in the Haiho basin. It sparked the people's initiative in building socialism.

When the key project for the permanent control of the Haiho was about to begin, the inhabitants who had drained the cup of bitterness in the old society vied with one another to take part. Parents sent their children

off to the worksite, wives saw off husbands, whole families volunteered. In many counties and people's communes the numbers of people who signed up were several or even a dozen times the required figures. There were inspiring scenes. The men and women of the "one-ox village" of the 1917 flood, Tungchao Village, all requested to join in the work, finally electing four model commune members to represent them.

Chang Hsiu-chih, a woman of poor peasant origin, recalled her family's suffering in the old days and told of their happy life in the new. She encouraged her two sons to take an active part in the water control project and they worked hard on it for many years. When her grandson was 17 she also sent him to work on the Haiho project.

The eldest son of old poor peasant Li Chien died on duty at the worksite. Li Chien then encouraged his second son to take over the wheelbarrow left by his brother and so continue the glorious task.

Since work on the project would be hard, women were at first excluded. But the women demanded to be permitted to join in the battle. They said, "We must have a share in answering Chairman Mao's call" and organized many "Red Girls Platoons" and "Iron Girls Companies" to join the hundreds of thousands of men on the job.

In winter and spring, while up to a million workers were busy on the key project, people in the adjacent countryside engaged in supplementary projects on an unprecedented scale: levelling hills, building terraced fields, digging ditches, sinking wells, planting trees. Each job was considered as a definite action towards implementing Chairman Mao's call. From the Taihang

Mountains to the Pohai Sea coast, from the Yenshan Mountains to the north bank of the Yellow River a tremendous upsurge began for controlling the Haiho. A million people and every commune and brigade were involved.

Led by Party organizations at all levels and complying with Chairman Mao's instruction: **"Ensure that there will always be water for irrigation in times of drought and adequate drainage in times of heavy rain,"** the people along the Haiho carried forward their comprehensive plan for preventing flood, waterlogging, drought and alkalization. They correctly handled the correlation between the situations in the upper and lower reaches and the right and left banks, between drainage and irrigation, remaking hills and harnessing rivers, water control and soil improvement, and between storing water and reducing alkalization. They undertook every project according to the needs of farm production and the availability of manpower and material resources. First things were done first and the work proceeded by stages, effort being concentrated on completing one job after another. In general, a project yielded benefits the year of completion, bringing into operation the general line principle of achieving greater, faster, better and more economical results.

The Haiho basin people's ten years of hard struggle in 1963-73 did a great deal in harnessing the river. Reservoirs of different sizes were built or enlarged on its upper reaches, making a total of more than 80 large and medium-sized, and 1,500 small reservoirs in the entire basin, greatly increasing the flood-detaining and water storage capacity in the mountain areas. On the middle and lower reaches 34 trunk waterways with a

total length of 3,700 kilometres, including the New Changwei, New Tzuya, New Yungting, Machia, Tuhai and New Tehhui rivers and the Tuliu Diversion Canal, were dug or dredged. A total of 4,300 kilometres of flood-prevention dykes were built, over 270 tributaries and 150,000 canals or ditches dug or dredged and 60,000 bridges, waterlocks and culverts erected along the streams. The completion of these projects outlined a water conservancy system in the middle and lower Haiho region which was well served with rivers and canals and combined drainage and irrigation. Outlets to the sea were added or enlarged, increasing the discharging capacity to more than five times that of 1963. The situation of "wide upstream, narrow downstream; flood and rain water competing for passage through the channels; few and narrow outlets blocking the flow" was basically changed. The menace of flood and waterlogging was in the main averted. The city of Tientsin and the Peking-Canton, Peking-Shanhaikuan and Peking-Shanghai railways were safeguarded. At the same time tree planting and the building of terraced fields and dams to conserve soil were begun in the mountain areas. On the plains deep ploughing to improve the soil, land levelling, the sinking of pump wells and enlarging of irrigated fields went ahead. Now each person in the Haiho basin has an average of one *mu* of watered land and the area of saline and alkaline land has shrunk considerably.

"Irrigation. . . is the lifeblood of agriculture." As water conservancy work progressed, the conditions for agricultural production radically changed and production rapidly increased. The per-*mu* yield of grain in many advanced counties, communes and brigades around Peking and Tientsin and other areas in Hopei and Shantung

provinces reached or exceeded 400, 500 or 800 *jin*,¹ as envisaged in the National Programme for Agricultural Development of 1956-67.² Since the Haiho project was undertaken, Hopei Province has reaped bumper harvests every year, nearly half of its counties and cities reaching the target set in the Programme. Northern Shantung,³ a low-yield and calamity-ridden area through the ages, has been self-sufficient in grain since 1971. In 1973 the over-all grain production for the Haiho basin doubled the amount before the control project. This has been an important factor in ending the necessity of supplying grain to the north from the south and implementing Chairman Mao's great calls: **"Be prepared against war, be prepared against natural disasters, and do everything for the people"** and **"dig tunnels deep, store grain everywhere, and never seek hegemony."**

"The correctness or incorrectness of the ideological and political line decides everything." The Chinese people's great success in harnessing the Haiho River was achieved under the guidance of Chairman Mao's revolutionary line and after defeating the interference and sabotage due to the revisionist line of the political swindlers Liu Shao-chi and Lin Piao. During the decade of

¹ One *jin* is equivalent to 0.5 kilogramme.

² This Programme, adopted by the National People's Congress in April 1960, set average annual *per-mu* targets for crop yields in different areas as follows: north of the Yellow River, 400 *jin*; south of the Yellow River and north of the Huai River, 500 *jin*; south of the Huai River, Chinling Mountains and Pailung River, 800 *jin*. Targets for cotton output were 60, 80 and 100 *jin* for the respective areas. The Haiho basin is in the area north of the Yellow River.

³ Northern Shantung includes Tehchou and Liaocheng regions and part of Huimin region — 27 counties or cities in all.

river-control work the struggle between the two ideologies and the two lines was very sharp. In 1963, after Chairman Mao had directed: **"The Haiho River must be brought under permanent control!"** Liu Shao-chi and his followers, opposing the instruction, vainly attempted to delay and prevent its being carried out. Some people were influenced by Liu Shao-chi's revisionist line and objected to river harnessing by mass effort. In 1965 when hundreds of thousands of peasant workers gathered at Heilungkang, these people spread rumours about this area being "a bottomless dark hole," trying to pour cold water on the rising mass movement to bring the Haiho under permanent control. During the Great Proletarian Cultural Revolution the Lin Piao anti-Party clique with its criminal counter-revolutionary aim sought to disrupt the unity of the masses and create splits and did its utmost to interfere with and undermine Chairman Mao's revolutionary line. It vainly attempted to stop the mass movement to harness the Haiho River. The struggle between the two ideologies and the two lines was apparent in many aspects of the river-control work: Put proletarian politics in command, or use material incentives? Rely on the masses and launch a large-scale mass movement, or rely on a small number of people and stifle enthusiasm? Go all out, aim high and achieve greater, faster, better and more economical results, or keep Right conservative ideas, waver and get few, slow, poor and expensive results? Work as one man, or each for himself? Co-operate for mutual benefit, or benefit oneself at others' expense?

Guided by Chairman Mao's revolutionary line, the people of the Haiho basin waged intense struggles against the revisionist lines of political swindlers like Liu Shao-

chi and Lin Piao and won victory after victory. The counter-revolutionary features of these swindlers were completely exposed during the Cultural Revolution and the movement to criticize Lin Piao and rectify the Party's style of work. The revisionist line was thoroughly refuted, the masses' political consciousness further raised and the mass movement to control the Haiho River swelled.



Tientsin streets inundated in the 1939 flood.

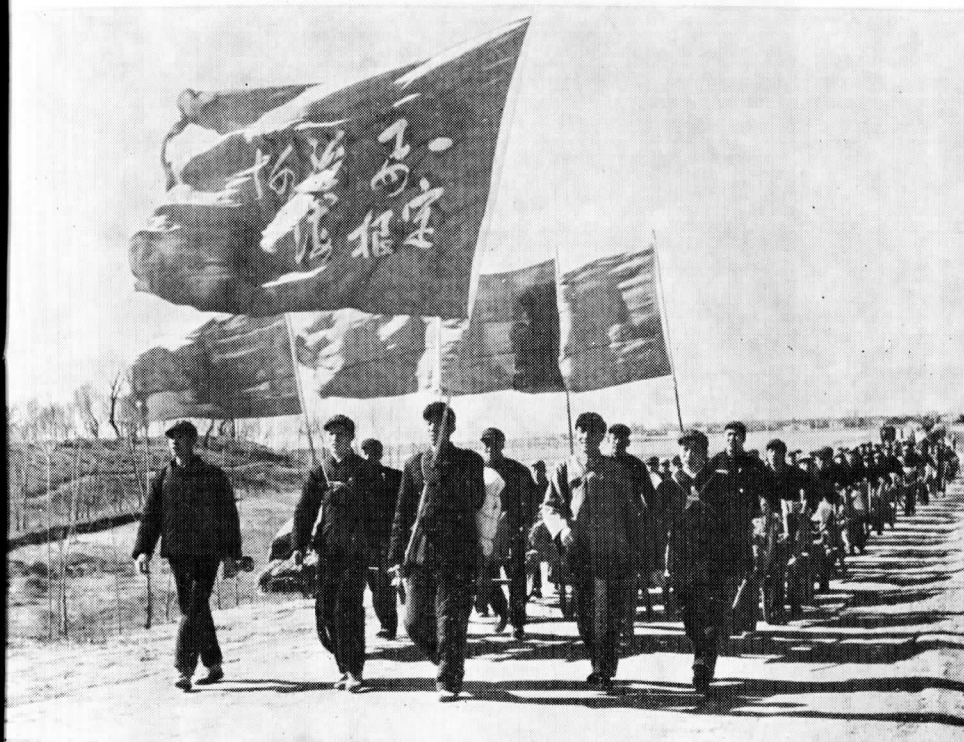
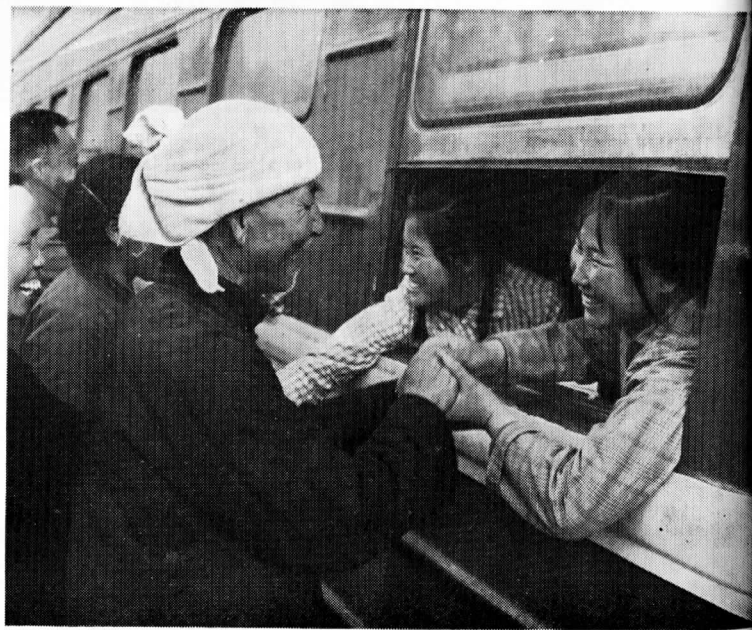
Hopei countryside in the 1939 flood.



Commune members in the Haiho basin sign up for river control work.



Seeing family members off to the worksite.



River-tamers heading for the site.



Peasant workers take an active part in criticizing revisionism and express their will and confidence to permanently control the Haiho.



A million people battle the Haiho.



Dredging silt (*upper*).

"I want to remove
a mountain!"
says Mu Tsung-
hsin, model
river-harnessing
worker.



The advanced group of "Tiger Cubs."



Fighting shifting
sand (*lower*).



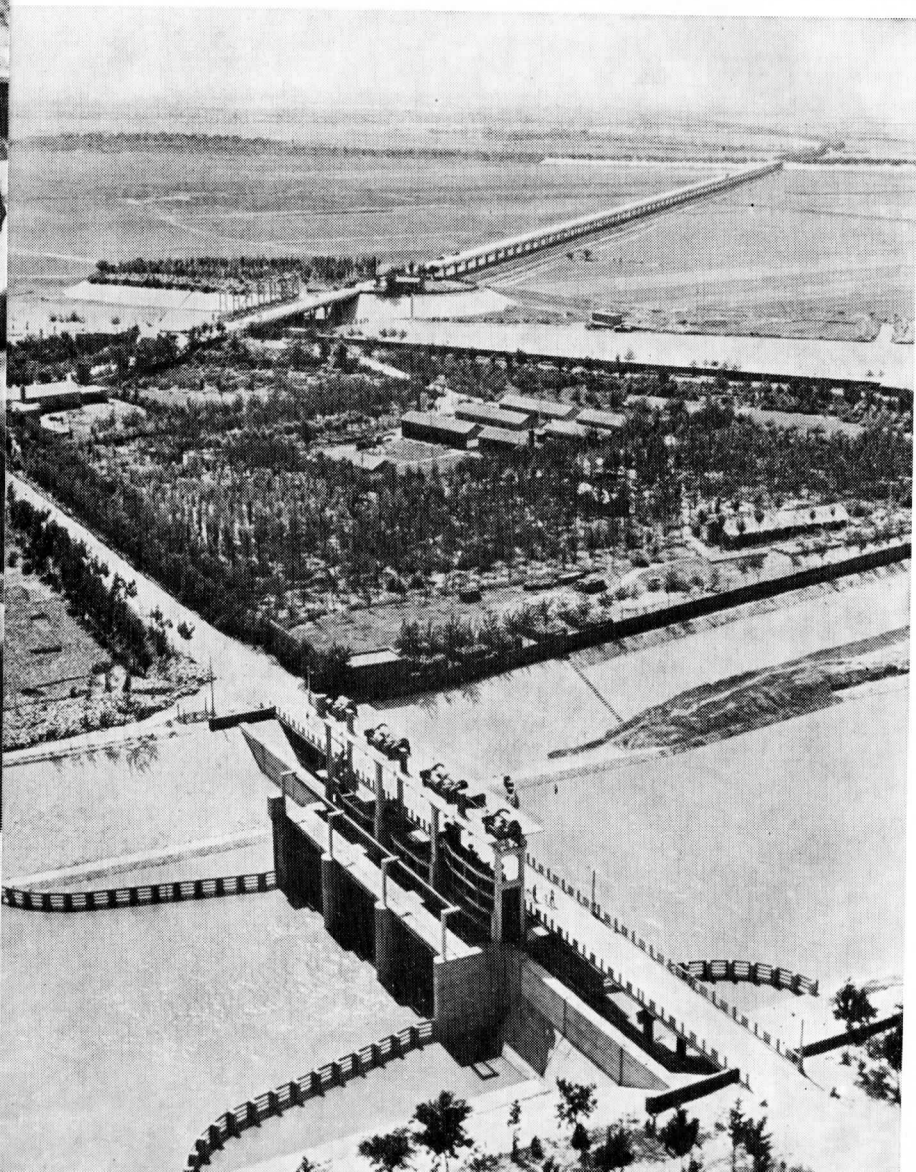


"Peasant expert" Hou Chen-ming (*front*) exchanges experience with other comrades.

Dredger at work opening a new outlet to the sea.



Hsienhsien key project on the New Tzuya River.

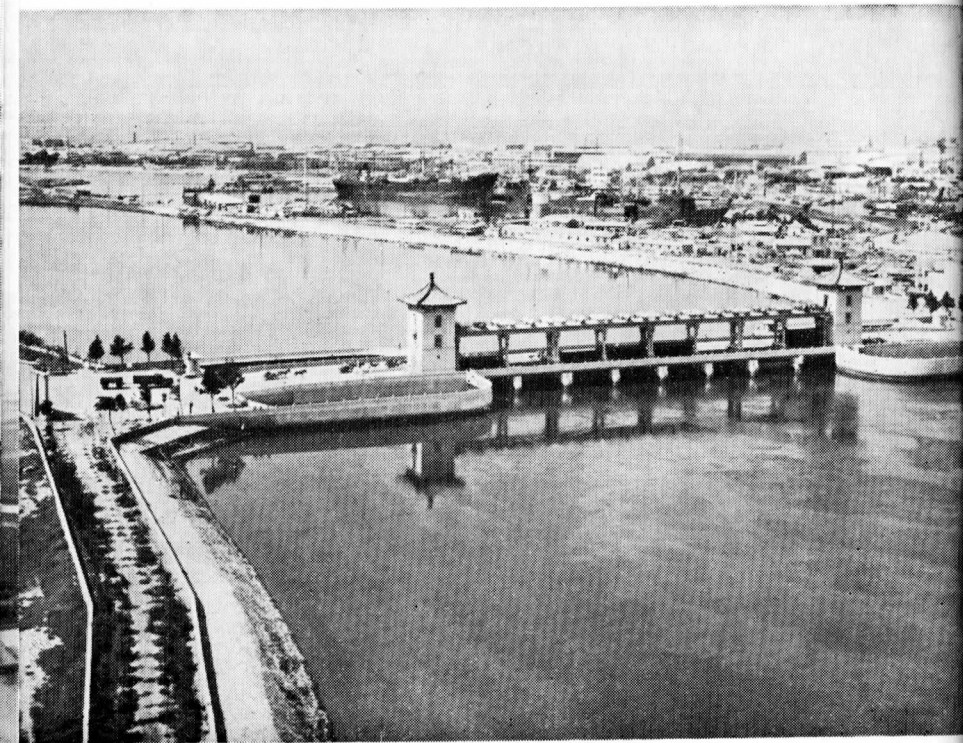


The New Tzuya main project across South Canal.

Headgate on the Tuliu Diversion Canal.



Major project at Szunuszu on the New Changwei River.



Tide-retention sluice on the Haiho at Tientsin.

A Million "Foolish Old Men"¹ Battle the Haiho

Concentration in the permanent-control project in the last decade was mainly on the dredging of the middle and lower reaches, dredging and excavating trunk waterways to drain flooded and waterlogged areas, repairing dykes, building sluice-gates and providing additional outlets to the sea.

The broad plains on the Haiho's middle and lower reaches principally embrace Tientsin Municipality, the Heilungkang area of Hopei Province and northern Shantung — altogether more than 80 counties or cities. These areas present great possibilities for developing agricultural production. The former scant drainage capacity of the local waterways meant frequent floods and waterlogging which seriously affected agricultural development. The permanent-control project was therefore very important.

¹ The Foolish Old Man is a legendary character. It was said that in ancient times this old man lived in a house facing two big mountains which blocked the pathway to his door. He led his sons to remove them. In 1945 Chairman Mao referred to this story in his article *The Foolish Old Man Who Removed the Mountains*. — Tr.

Each winter and spring saw hundreds of thousands or up to a million people in the Haiho basin gathering to work on the trunk waterways of the middle and lower reaches. Manifesting their revolutionary spirit of self-reliance and hard struggle and adopting the method of concentrating all efforts on harnessing one river after another, they did a tremendous job.

Success Out of Hard Struggle

*Five-hundred-kilometre dykes rise from level ground,
Milky Ways are built one after another by the people's hands.*

Every river, every dyke in the Haiho basin embodies the revolutionary spirit of the peasant workers in conquering nature and pioneering in a magnificent enterprise by herculean effort.

The workers devoted the whole 1964-65 winter-spring period to dredging the Hsuanhui River, a trunk waterway draining waterlogged areas in the Heilungkang area, winning initial success. From the winter of 1965 to the spring of 1966 a labour force half a million strong battled in the Heilungkang area, completing the drainage project for the entire area. In the years following the peasant workers moved northward, successively taming the Tzuya, the Taching and the "four north rivers" (general term for the Yungting, North Canal, Chaopai and Chi Canal). Braving all weathers, they went from worksite to worksite and experienced many hardships.

In the ten years' work of excavating rivers and building dykes more than 1,700 million cubic metres of earth were moved. Most of this was done by hand and in the cold of winter and spring when the earth was often frozen. Rock, silt and shifting sand were all encountered. Often strong iron shovels failed to break through, while sometimes barrow wheels sank into knee-deep mud or sand. Then channels had to be dug in rivers and dykes erected in lakes. The fight was hard against the muddy water!

But no difficulty could stop the peasant workers determined to tame the Haiho River. Their solemn pledge was: "Our hearts red and hands able, a million Foolish Old Men will battle the Haiho with wheelbarrows and shovels. Even if a Mt. Tai bars our way, we'll remove it!"

The extremely difficult work of digging the New Yungting River started in the winter of 1970. The greater part of the site lay in a swampy area along the sea coast where the land was covered with muddy water and reeds. At high tide it was all water and at low tide all mud. Barrows could not be pushed in, shovels could not dig. Hundreds of thousands of peasant workers fought the wind and snow carrying wheelbarrows, pumps and materials to the worksite. They cut the reeds in the muddy water and erected work-sheds on the beach.

The peasant workers from Chinwangtao were assigned the tip of the New Yungting River mouth where sea water rushing into the worksite every day at high tide stopped the work. So, to block the tide water, the 1,000 workers braved cold and fatigue working in the muddy water to build a five-kilometre earth dyke.

The section where the peasant worker contingent from Huanghua County worked was at the intersection

of an old river with seven metres of silt piled up. Digging was hard. But in freezing weather some 3,000 peasant workers beat the work schedule and broke the frozen earth with sledge hammers, removing ice clods as heavy as 300-400 *jin*. Even in that weather the workers' clothes were soaked with sweat; their skin split and there was often blood on their hammer handles. Yet, far from complaining, they sang bravely:

*Haiho's peasant workers have firm fighting will,
What does it matter if the earth's stone hard?
Our sweat melts the thousand layers of ice,
Sweet is the work for the happiness of younger
generations.*

Their stubborn fight resulted in over 60,000 square metres of frozen earth removed and they were the first to report success on the New Yungting River worksite.

Particularly energetic were the young peasant workers who vigorously showed their ability and did the harder work. They considered it an honour to endure hardships and really dared to struggle and win. Among the peasant workers from Tacheng County of Hopei Province was a "tiger cub squad" of a dozen young school graduates. This was their first experience in river-control work and at first they staggered along pushing the barrows and kept having upsets. A day's job for each was to cover a distance of 50 kilometres and transport a total of 10,000 *jin* of earth — no light task for an untempered youth. But with strong determination and high spirit these young people took the job as a good chance to steel their revolutionary will. With stubborn perseverance they overcame one difficulty after another. At first the shifting sand was cleared away only to fill

in the cleared spot again. They then thought of piling the sand against a slope to let the water drain out, which raised their working efficiency. None of these young people complained of the mud and sweat. In the end they subdued the shifting sand and finished the job ahead of schedule.

The "tiger cub squad" met another test at the Taching River worksite where they had to dump the earth 800 metres away. Each pushed a barrow with a 400-500 *jin* load up 200 metres of slope and 100 metres down the other side. Full of fight these young men said, "When the Red Army crossed the snow mountains and grasslands on the Long March they had no fear of hardship or death. Harnessing this river today, we too must show our revolutionary mettle." They did that and successfully completed their task. Hard struggle matured the "tiger cubs" quickly and the squad grew into a strong peasant-worker company on the Haiho front. Squad leader Chang Teh-lin joined the Chinese Communist Party at the worksite and became the company instructor.

The peasant workers never flinched in face of the dangers in the course of the river-excavation and dyke-building work but displayed the high proletarian revolutionary spirit of fearlessness and readiness to make sacrifices. An earthquake in the spring of 1966 failed to stop the river-tamers in Heilungkang. They said, "River control is for the revolution. The earth may shake, but not our determination. Let it quake; we'll go on working!"

In the winter of 1968, the Tuliu Diversion Canal excavation site experienced an unusually high tidal wave. The peasants working near the sea rushed to the beach

at night in the rain to repair the retaining dyke. The reinforcing gunny bags they used were quickly swept away by the fierce wind and waves, so they jumped into the water and, arm in arm, formed several human walls to hold the waves while the repair work went on. After two hours of hard fight the dyke was firm against the danger from the tidal wave.

In 1969 the people of northern Shantung were building a big sluice-gate on the Tuhai River when they suddenly discovered a crack in the two-metre-high earth wall along its foundation trough. Just as it was about to collapse, poor peasant Pang Yu shouted to the people in the danger area, "Run quickly!" and rushed up to cover the crack with his body. Other workers joined him, preventing the collapse and safeguarding lives and property.

People ask where these peasant workers' selflessness and strength came from. The answer may be had by visiting the Haiho worksite and observing the proletarian feeling with which the river-control work is done.

Poor peasant Mu Tsung-hsin arrived at the worksite carrying the beggar's basket he had used before liberation. His mother had lost her eyesight as a result of suffering in the old society. His father had worked as a hired hand for a landlord who threw him out in a flood year. Indignation made the poor old man sick and he too went blind. With this basket Mu Tsung-hsin took his blind parents begging round the villages. When the battle to control the Haiho began Mu Tsung-hsin's mother told him tearfully to join in the great work. "Take the beggar's basket with you," she said. "Don't forget our past suffering. Work hard for the revolution!"

On the worksite Mu chose the heaviest jobs and was always out front. The earth was so dry at the project in Heilungkang where he went that a shovel recoiled from the brick-hard clods, shaking the hand holding it. Mu did better with a spade but was still not satisfied. He changed to a bigger barrow, filled it full and pushed it over 100 metres each trip, setting a record of moving in one day 20 cubic metres of earth, 60,000 *jin*. Why was Mu so energetic? Taking up his beggar's basket, he said to his comrades, "Every trip I make with the barrow I think of Chairman Mao's great call. I also remind myself of the past with this beggar's basket. That makes me want to remove a mountain each trip and dig a river with one thrust of the spade!"

Mu Tsung-hsin was typical of the thousands of peasant workers who shared his experience. In the old society they suffered from class oppression and the havoc caused by the Haiho. Now, in this great battle they displayed gigantic strength to overcome every difficulty and win victory.

Careful Planning, Magnificent Work

Wide rivers and solid dykes now cover the broad plains of the Haiho basin. Giant projects that prevent flood, eliminate waterlogging and store water for irrigation have materialized out of the vast wisdom of the people. They are the product of more than ten years' careful planning and magnificent effort by the peasant workers and technical personnel.

Technicians did not separate themselves from the peasant workers but adhered to the policy of combining

the efforts of the cadres, the masses and themselves. They left the office buildings, threw themselves into the struggle and learned from the masses. The hydrologists trekked hundreds of miles gathering data, examining every stream, investigating evidence of floods in the past and measuring water velocity. They also visited hundreds of communes and brigades to find out the direction of the floods. The geological investigation personnel camped out wherever they went and covered wide areas on foot. They drilled thousands of holes totalling tens of thousands of metres in depth in quest of the scientific data needed for the projects. Surveyors navigated rapids and climbed peaks in their work of mapping the Haiho basin topographically. The planning workers travelled the Haiho's principal waterways and tributaries in their investigation and study and learned from old poor peasants about the Haiho's past and present. Realistic and practical, the technical personnel tirelessly checked and rechecked all data and reference materials for correctness, making long trips and doing whatever work was necessary. They were convinced that good planning and designing was important for implementing the Party's general line of **"going all out, aiming high and achieving greater, faster, better and more economical results in building socialism"** and that good planning and designing was requisite to bringing the Haiho under permanent control. Listening to the poor and lower-middle peasants' stories of their tragic fate in flood disasters in the old days and getting their ideas on control, the planning workers were greatly educated ideologically, so that their thinking and feelings more nearly approximated those of the poor and lower-middle peasants and they got a clearer idea of river-control work serving the people and production.

Their planning took into consideration the situation as a whole and also local interests. They worked out their long-range plan with an eye on the day-to-day production needs; their detailed plan was designed to bring greater, faster, better and more economical results. The remade river channels would lead off floodwater and drain waterlogged areas as well, separate salt from fresh water, facilitate navigation and leach alkaline land.

An example is the New Tzuya River. The Tzuya, with the largest basin in the Haiho system, was the greatest wrecker in the past. Dredging would not suffice to reduce its flood menace — a new Tzuya with a volume of flow several thousand cubic metres per second would have to be dug. The question was: where? A new channel should start at the Tzuya's headwaters, turn east through south Tsangchou, cross South Canal and the Peking-Shanghai Railway and empty into the sea. When the planning personnel inspected this proposed route, however, they found it would cut through good soil with high crop yields, rich orchards and many villages. It would affect more than 30,000 *mu* of good farmland, 13,000 *mu* of economically valuable trees and 82 villages.

Was there not an alternative route? The planning group went again on foot to investigate, consulting the local people along the way. Finally, after much study and comparing, they selected the present route. It would cut through swampland, few villages and a large proportion of saline or alkaline soil. Moreover, land gradients favoured the water flow.

The next question was how this 140-kilometre new river should be dug. Again the planners went for advice to the poor and lower-middle peasants along the route. The peasants said, "The river must be dug. That's sure.

But big floods come only every eight or ten years, so while the river must take care of big floods it should not take away too much land." Well put! The final plan called for two rivers and two dykes to control both flooding and waterlogging. A deep ditch 20 metres wide was to be dug along the northern side of the three-kilometre-wide river channel to drain floodwaters in ordinary years, the excavated earth to build North Dyke. South of the deep ditch was to be a two-kilometre-wide beach and south of that South Dyke. Between the two dykes would flow the New Tzuya River which would take care of extraordinary floods. Close to and south of this new river another channel, North Drainage Canal, was to be dug for clearing accumulated water. This excavated earth was to be used in erecting South Dyke of the New Tzuya. The two rivers and two dykes would function separately. In years of ordinary flood, water from the ditch could be used to leach the alkali from the beach and irrigate surrounding farmland to ensure planting and harvesting. In times of heavy flood the ditch would receive water to be used later to enrich the soil. It would also provide drainage for the waterlogged south side of North Drainage Canal.

Included in the unified plan and to be completed about the same time were six river-control sub-projects: river excavation, dyke erection, road making, bridge building, land reclamation and tree planting. The people approved. "We'll dig the river, protect the land and complete all six sub-projects," they said. "That will be achieving greater, faster, better and more economical results."

The carefully worked-out blueprint had yet to be brought to realization by the people's strenuous efforts.

The peasant workers stressed quality, saying, "In a task so important for generations to come we must use every means to ensure good quality in the work." With their high sense of responsibility, they neglected no detail. They strictly followed the specifications for the gradients of the channels and river-bed depth to effect smooth flow. They built the dykes of the best earth available, examined it for water content and carefully sifted out any extraneous substance. Rolling and tamping were done solidly. From the dyke-building worksites arose a great number of model workers. Hou Chen-ming, a Communist and a river-control hero, was known as a "peasant expert" among the workers. He followed the Haiho permanent-control project for ten years. Working wholeheartedly for the revolution, he conscientiously studied Marxist-Leninist works and Chairman Mao's writings and was good at summing up his own and the masses' practical experience. He made valuable contributions to the Haiho project by introducing scientific work methods which raised efficiency and saved money.

Hou often said, "Only the combination of hard work and skill overcomes difficulty. Digging rivers and building dykes are important tasks for centuries to come. We must set our standards high and make strict demands on ourselves." When the digging of the New Tzuya River began Hou went first as company commander of the peasant workers to the nearby communes and brigades to learn about the earth structure there. An old poor peasant told him that the water table was high, that there were different types of soil. Seven feet down a layer of "sheepskin earth" had beneath it yellow impervious clay. This information, confirmed in the work, was a useful contribution by the old poor peasant. What he described

as "sheepskin earth" was soft and sandy, fell apart when dry, blew away in a wind and couldn't stand rain. It wouldn't build dykes. Hou and the peasant workers decided to discard all "sheepskin earth" and use only good earth in the dyke. Some disagreed. Suppose the calculation were incorrect, they argued, that would be throwing away earth needed to build the dyke. The work schedule would be put back and their company's title of honour forfeited. In short, it would be "reckless."

After refuting this wrong idea which would forfeit quality, Hou and the peasant workers began to see eye to eye and work proceeded along correct lines.

In the course of construction Hou noticed that some of the peasant workers did not strictly follow the specifications, thinking that this did not matter. Hou considered such thinking prejudicial to the quality of the project. So while spreading the idea of stressing quality in a long-term project, he sought simple and easy methods. For instance, he used his own body measurements and those of his spade in calculating the amount of earthwork done and the amount still needed for the dyke. According to this method, the estimated 3,500 cubic metres of "sheepskin earth" was removed and the yellow clay beneath brought up to build the dyke. The river channel was dug to the correct depth and the dyke completed. Quality was ensured and 120 days' work finished in 75.

Careful in work, Hou was levelling the dyke at the Taching River worksite when he picked out a piece of corn stalk. When a new peasant worker asked him what a little thing like that mattered on such a big dyke Hou replied, "A solid dyke can collapse because of an ant hole in it. Unwanted material in the dyke will act like a time bomb. At the flood season when the dyke is saturated

with water this 'time bomb' could cause a breach at any time and spoil the whole thing. We must work conscientiously to respond to Chairman Mao's great call and tame the Haiho."

Like the "red and expert" Hou Chen-ming, the thousands of peasant workers at the Haiho worksite, armed with Mao Tsetung Thought, demonstrated their ability and creativeness to change the earth's features.

Workers and Peasants Join Hands to Build Bridges and Sluice-gates

Tens of thousands of bridges, sluice-gates and culverts were built in the Haiho basin in the decade. Great water-locks stand at the principal outlets to the sea, storing fresh water from upstream in the channel and preventing sea water from entering — separating salt water from fresh and allowing floodwater to drain into the sea. Distribution, diversion and intake installations have been built where streams converge so that in flood times the water flows into the channels or is stored in ditches or lakes. In the dry season it can be diverted into a single waterway for navigation, irrigation and to supply urban areas. Boat locks facilitate the passage of vessels; check-gates and conduits store water and irrigate. Like valves in water pipes, these can direct the water in the desired direction. Bridges of various sizes over the rivers and canals link railways and highways.

Such a large amount of work required high technical skill and was to be completed in a short time. Most projects, begun in winter-spring and to be completed before the summer high-water season, meant river ex-

cavated, bridge traffic opened and sluice-gates in operation. The question arose whether to rely entirely on the state and on a small number of technical personnel or, with the support of the state, to rely on the masses and launch a large-scale mass movement. The question was important as it concerned the line to follow — whether greater, faster, better and more economical results were to be achieved in the project.

Some people who had no confidence in the strength of the masses doubted the method of the mass movement. Peasants could dig, they said, since they were used to handling earth and clay, but what about the more complicated work? Practice refuted this wrong idea. In fact, a large amount of the work was done by the peasant masses with the help of the workers and technical personnel.

In the spring of 1965 the peasant masses worked together with some 100 workers and technical personnel of the Water Conservancy Bureau of Hopei Province to build 150 bridges and culverts along the Hsuanhui River.

The work included 25 reinforced concrete bridges which they built by the shaft method, excavating for piers as they would sink wells. They built the bridges before digging out the river beds, drilling holes for the piers, inserting steel frames and pouring in concrete. This method reduced costs, ensured speed and safety in work and called for simple equipment and technique. The workers and peasants had no previous experience using this method but they were determined to try it. They said, "No job is difficult when workers and peasants tackle it with one mind!" In order to learn with the least effort possible they first built an "experimental bridge."

The spot they chose for this was sandy and not good for drilling holes. The peasant workers with well-sinking

experience volunteered for the job and brought along their big well drill as the worksite was short of boring machines. But the holes drilled did not meet the requirements of the bridge piers. So, together with the workers and technical personnel, they studied the problem and reshaped the drill bit. To solve another technical problem, that of pouring the concrete, a study group was formed of cadres, workers, peasants and technical personnel. After many experiments, they succeeded in meeting the standard for quality.

The building of this bridge not only gave experience but, more important, exploded the old notion that peasants could not handle complicated jobs. The hundred or more structures completed along the Hsuanhui River by the peasant-worker-technician groups stand as proof of the role peasants can play in such major projects.

In bringing the Haiho under permanent control, many work forces with several workers and technicians as core and peasant workers as the main force have steadily improved their skill in the process of bridge and sluice-gate construction. They can now build bridges with 2,000-metre span and other large key projects handling waterflows of thousands of cubic metres per second.

At the upper New Tzuya River where the Huto and Fuyang rivers merge stands the Hsienhsien key project with tall distribution gates controlling the Tzuya's mouth. The intake gate and spillway, located at the New Tzuya's mouth, handle a flow of nearly 10,000 cubic metres per second. There is also a 1,000-metre highway bridge. The turbulent upper Tzuya becomes the man-made New Tzuya here, no longer a menace to villages and farmlands downstream, nor to Tientsin and the Peking-Shanghai Railway. In the dry season the distribution gate can re-

lease water to supply Tientsin and irrigate adjacent farmland. The entire project was completed in only nine months by the peasant workers of Hsienhsien County together with the 140 workers and technical personnel of the Hopei Fourth Building Company.

The Hsienhsien project started in September 1966, when the Great Proletarian Cultural Revolution began. High-spirited and militant, workers and peasants pitched in. Experienced workers put up big-character posters expressing their determination to coach the peasants in technical skill so as to harness the river for the revolution. The peasants pledged to learn technical skills for that aim. The workers and peasants lived, ate and worked together. Teaching was by practical demonstration in the daily work; in the evening they summed up the day's experience in the spirit of concern for and learning from each other. In two months some 1,000 peasants had grasped fundamental techniques.

It was late winter when concrete was to be poured for the base of the dam. Ordinarily such work would not be done in the open in winter. But now the workers and peasants put up reed and grass mat-sheds and made petrol barrels into stoves to raise the temperature sufficiently to continue the job through the cold weather.

Concerted efforts defeated difficulties and speeded the work. The Hsienhsien project was completed before the high-water season in 1967.

The New Tzuya flows eastward from Hsienhsien under and at right angles with South Canal, which flows overhead northward through an aqueduct, then continues eastward in its man-made channel. The aqueduct, 210 metres long, 30 metres wide and supported by 378 large pillars of reinforced concrete, was built by a similar work

unit simultaneously with the Hsienhsien project. It was on this project that the shaft method was used for the first time in building a large aqueduct. Workers drilled some 300 holes to required depth with indigenous rigs and completed the aqueduct before schedule.

The co-ordination of workers, technical personnel and peasants not only ensured speed and quality but also trained a large reserve of technically able workers for rural water conservancy. The second work group of the Hopei Water Conservancy Bureau alone has trained over 5,000 peasant workers as carpenters, electricians and reinforced concrete handlers. Peasant workers have become an important force in building bridges and dams. In many places where prefabricated reinforced concrete structures had to be sent from city plants, peasant workers now made such structures on the worksite. At first they replaced wood with steel or brick in making moulds. Now they found impervious sand clay also usable, saving a lot of timber. They made hoisting devices which raised prefabricated structures weighing some 10 tons to a height of 10 metres in building dams and bridges.

The working people's collective brain and hard-working hands have built magnificent bridges, sluice-gates and dams one after another, demonstrating the creativeness of the masses and confirming the irrefutable truth: **"The lowly are most intelligent; the élite are most ignorant."**

Economy and Self-reliance

Visitors to the Haiho worksite never failed to be impressed by the atmosphere of self-reliance and hard

struggle, and by the attention paid to cutting costs for the state and the communes. Mass effort to practise economy began with the harnessing of the Hsuanhui River, the first project in the Haiho River control programme.

The Hsuanhui is a trunk channel draining excess water from the Heilungkang area of Hopei Province. It is 165 kilometres long with a basin of over 3,000 square kilometres. Its drainage capacity used to be low, and a heavy rain would inundate the 2.7 million *mu* of farmland. People living along the river had years before proposed that it be harnessed and the conservancy departments had included the task in the state plan. The same old question arose of whom to rely on, the masses and their socialist initiative or the state entirely? At first, Liu Shao-chi's revisionist line blinded some people to the masses' strength and they wanted to depend solely on state funds. Their plan called for nearly 40 million yuan from the state and three years of time, and they said that this was a conservative estimate. Actually, this three-year plan stayed on paper for three years during which not a spadeful of earth was moved.

In 1963, inspired by Chairman Mao's great call for the permanent control of the Haiho, the people along the Hsuanhui River vied with each other to join in this great battle. They said, "Harnessing this river is our job. The state's help shows the concern of the Party and Chairman Mao for us, but we cannot rely on the state for everything. We must rely on our own efforts as Chairman Mao teaches us!" Leading cadres and technicians again made on-the-spot investigations, studied and discussed with local commune members and drew up a plan requiring less money and less time.

After autumn harvest in 1964 the people of six river-side counties formed a river-control work unit 60,000 strong and marched to the worksite wheeling their own barrows and the material for erecting sheds, all from their own production teams. And so began the battle for dredging and deepening the Hsuanhui, with economy as the watchword. For instance, in dealing with a 50-kilometre section of the Hsuanhui which was plagued with flowing sand so that each spadeful dug out only flowed back again, the technicians proposed driving in first a row of piles and then a row of willow branches. But this would require 3,500 cubic metres of timber which the peasant workers considered too costly. After more discussion the plan was adopted of "sinking wells and pumping out the water to leave the sand high and dry." Every few metres a well was dug and a brick wall built inside; water seeped from the sand into the well, was pumped out, and the problem of flowing sand was solved. Later, the bricks in the well lining were replaced with thorny branches, saving still more money.

The expenditure was cut again and again and the project was completed in one winter-spring season instead of three thanks to the unstinted effort of the peasant workers. The money used was cut by two-thirds.

Economy and self-reliance proved their worth in the Hsuanhui River project, particularly after the Cultural Revolution began and the thorough refutation of Liu Shao-chi's revisionist line. The revolutionary spirit of "running all undertakings industriously and thriftily" prevailed throughout the Haiho worksite. There were many moving instances of this.

One example was the rows of simple work-sheds, or "dragon nests," as people called them. Housing had been

expensive before. Now the peasant workers built their own sheds of millet stalks on wooden frames coated with mud, or even on millet-stalk frames, the stalks being tied in bundles and replacing wooden posts. Such sheds, shelter against wind and cold, can be easily put up and taken down. The cost of this type of shelter for each peasant worker from Huanghua County, Hopei Province, was only 0.30 yuan, 87 per cent less than in past years. A total of 55,000 yuan was saved on this item alone.

A "dragon nest" story of revolutionary struggle was told by an old poor peasant from Huanghua County. Situated near the Pohai Sea, the county had few villages but many swamps before liberation. Unable to bear the cruel exploitation and oppression by the landlords and despotic gang bosses over the fishermen, labouring people went into the desolate swampland to eke out a living. For shelter they built huts of whatever material they could find, tying sorghum stalks together and covering them with straw. To huts such as these Party cadres had come to live with the masses in the early days of revolutionary struggle, discussing with them how to fight the enemy. Under small oil lamps in these huts they had kindled flames of revolution.

Today, peasant workers arrived at the Haiho worksite from new houses in their home villages to live in sheds patterned after those of the old days, demonstrating their determination to follow and bring new life to the fine revolutionary tradition of hard struggle.

Peasant workers from Tsunhua County brought their famous "paupers'" spirit with them to the worksite. There an agricultural co-operative led by Wang Kuo-fan had in the 1950s become a national model of diligence

and thrift when 23 poor-peasant households with a three-quarter share in a donkey formed the "paupers' co-op." Chairman Mao praised it after three years of hard work and economy had changed the situation in the "paupers' co-op." He said: **"This is the pattern the entire nation should follow!"** Though Tsunhua County is much better off now the peasant workers have not forgotten their glorious "paupers'" tradition but persisted in their thrifty ways. Short of wheelbarrows, they repaired 350 considered beyond repair. Planks for barrow paths, which would require 200 cubic metres of timber, were made of odds and ends of lumber and tree branches bound together.

This new thinking, that the style of hard work and thrift is a thing to be proud of, took hold on the Haiho worksite. Office desks were often wood planks on unbaked bricks; some units even made writing brushes of sorghum stalks, the material used also for the clinic medicine shelves. Cooks re-fashioned stoves as many as 150 times and cut coal consumption from two *jin* per person per day to 0.6 *jin*.

The decade of the river-control work was a decade of the "paupers'" spirit blossoming. The drainage work in the Heilungkang area, for example, (including the dredging and deepening of nine trunk canals and waterways and the construction of some 340 bridges, sluices and culverts) was not only completed ahead of schedule but at a saving of money sufficient for the peasant workers to build a 2,000-metre railway bridge over the New Tzuya River on the Peking-Shanghai railway line and a 1,000-metre bridge on the Shihchiachuang-Tehchou line.

For the Whole Country

The gathering of nearly a million peasant workers from all parts of the country at worksites extending hundreds of kilometres to fight a great battle opened up new vistas. People saw the project not just to benefit one family, commune or county but the entire Haiho basin and country. Wang Hsiu-lan of Shantung Province, well-known model worker in river-harnessing, said: "On this big chessboard of river control, our communes and counties are like men in the game. We can only dig a pit—only when the people of the entire basin and province are united as one can a canal be dug."

This 50-year-old former poor peasant was known on the Haiho worksite as an "extra." At every stage of the river work he turned up as a peasant worker, though his age and poor health prevented approval as a regular worker. Still, as an "extra" he came with his wheelbarrow and bed roll every winter-spring, slept in the open and did what he could at the northern Shantung worksite. One day he went to the Chiyang County worksite and saw that one of the brigades was behind in digging earth. Old Wang immediately put down his bed roll and started digging. Asked where he was from, he replied, "The people's commune." Asked where his worksite was, he answered readily: "It's anywhere and everywhere—wherever there's still a spadeful of earth to be dug." He dug for five days and left only when the brigade got back on schedule.

"Why do you come anyway?" someone asked Wang Hsiu-lan. "Every year you push your barrow and carry earth. You don't sign up for work-points and don't care about pay."

Old Wang replied, "Every basket of earth carried is one basketful of flood menace removed, one more picul of grain reaped. On the big chessboard of river control I'm one more man in the game." And he was not the only one. A million "Foolish Old Men" of one heart co-ordinated a nation's efforts as in a giant chess game.

In 1970 the cities of Peking and Tientsin and Hopei Province jointly drew up the plan for digging the New Yungting River and a sewage channel serving Peking. The New Yungting was to start at Tientsin's Chuchiatien district and enter the sea at Peitang. It was to be 63 kilometres long and an average of 500 metres wide. A dozen large reinforced concrete bridges and a number of culverts were to be built, the entire project involving 100 million cubic metres of earthwork. The project, to be completed in one winter-spring season, was sited mostly in low-lying swamp areas with no roads or drinking water. Peasant workers from Hopei volunteered to take up these heavy digging and dyke-building tasks. Tientsin was to build most of the bridges and all the culverts, and to supply materials. To prepare for the actual work, Tientsin workers and peasants braved wind, rain and muddy water to build roads, put up electric wires and sink wells before the hundreds of thousands of Hopei peasant workers arrived at the worksite. The city's grain, fuel and trade departments got the needed supplies to the sites in good time.

With different phases of the project proceeding simultaneously, each work group tried to solve its own problems so as not to affect others. The Shihchiachung peasant workers, for example, did their work by sections to accommodate the Tientsin people building bridges and culverts. Also, in late winter when work was generally

suspended, the Tientsin workers kept on in order to complete their job so that others could work at the same site in spring.

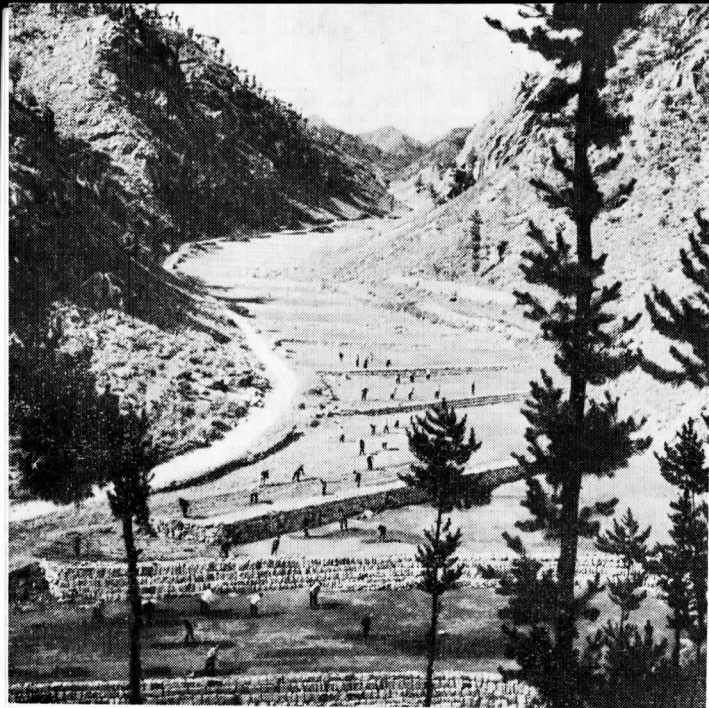
On the Peking sewage channel project the Peking and Hopei work groups each wanted to do more than their assignment. The Hopei group gave the name "Bridge of the Peking People's Fine Style" to a project assigned to them but built by the Peking group.

In the winter of 1971 Hopei and Shantung workers joined forces at the New Changwei River worksite and put into practice the Party's line of uniting for victory. Feihsiang and Ningtsin counties of Hopei and Shantung showed close co-operation, draining a site and supplying tractors each for the other. When a pump belonging to peasant workers of Hopei went out of order, mechanics from a brigade pumping station in Shantung rushed across the river to repair it, using their own spare parts. They said, "Responding to Chairman Mao's call is our common responsibility. In this we are one family."

The New Tzuya River, planned originally to pass through a village, was to be re-routed to save the commune members the trouble of house-moving. But when the village cadres and poor and lower-middle peasants heard of this they called a meeting to oppose the change. They said, "Permanently controlling the Haiho is important to implementing Chairman Mao's instruction: **'Be prepared against war, be prepared against natural disasters, and do everything for the people.'** The proposed detour would not only mean more work for the builders but it would be less effective in flood-draining. We must consider the over-all benefit and move the village to make way for the river." The villagers insisted and the original route was adopted. There were many other such



Changing mountain areas into arable lands.



Remaking gullies to
increase farmland.

Terraced fields

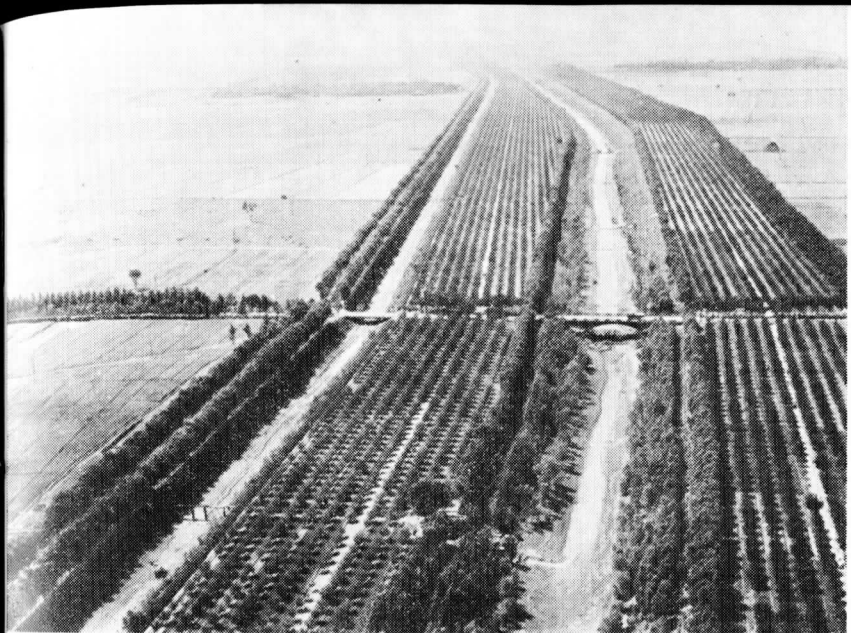


Planting trees on
steep cliffs.

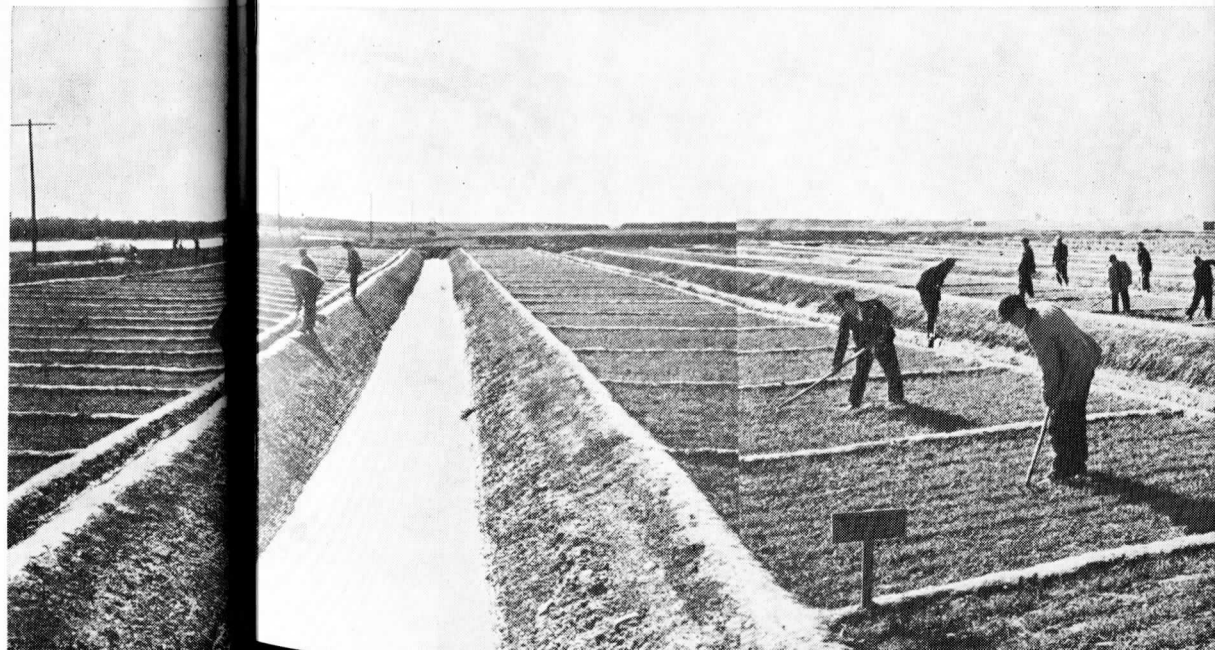


Water pipes cutting through mountains.

Water chann
straight roads a
tree belts aga
wi



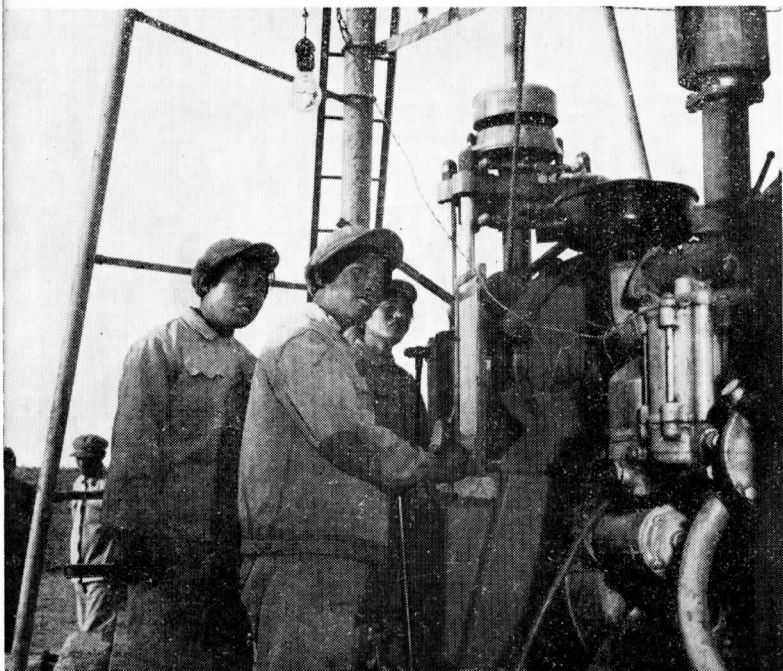
Digging ditches and raising ground level to create farmland.



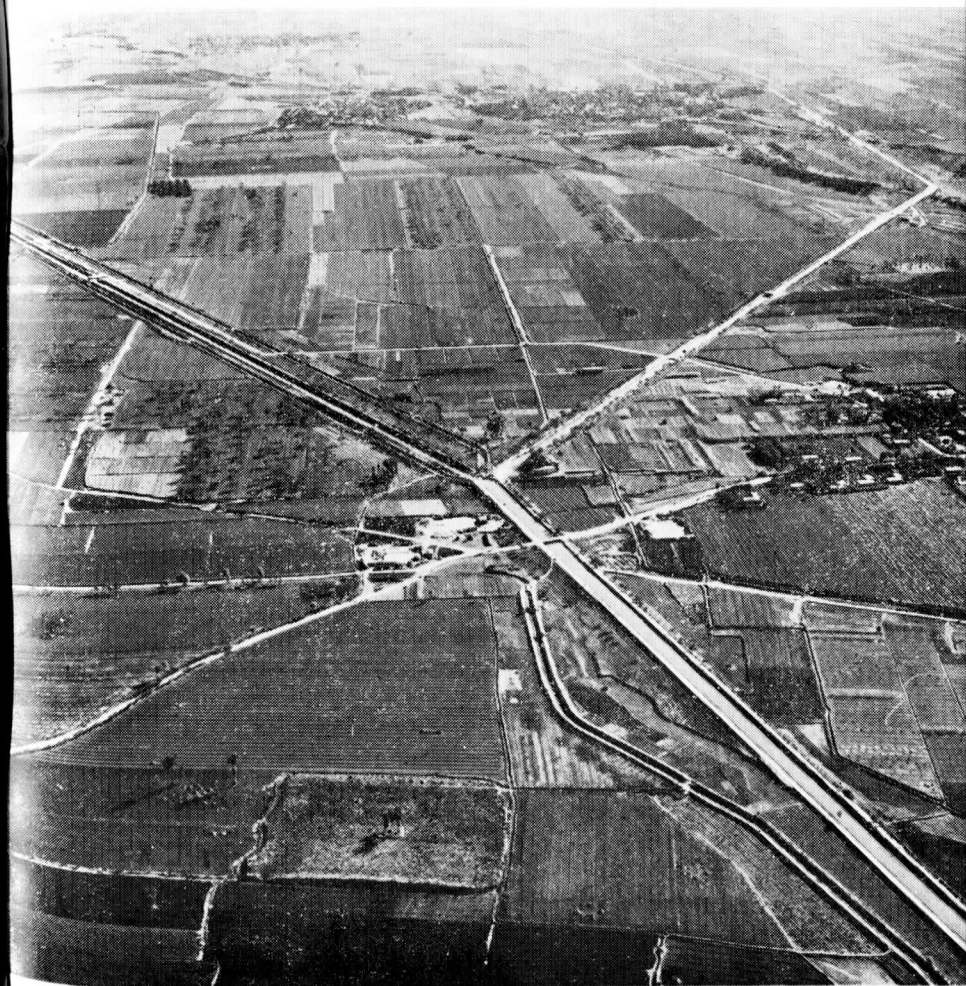
Working at the well-drilling site day and night.



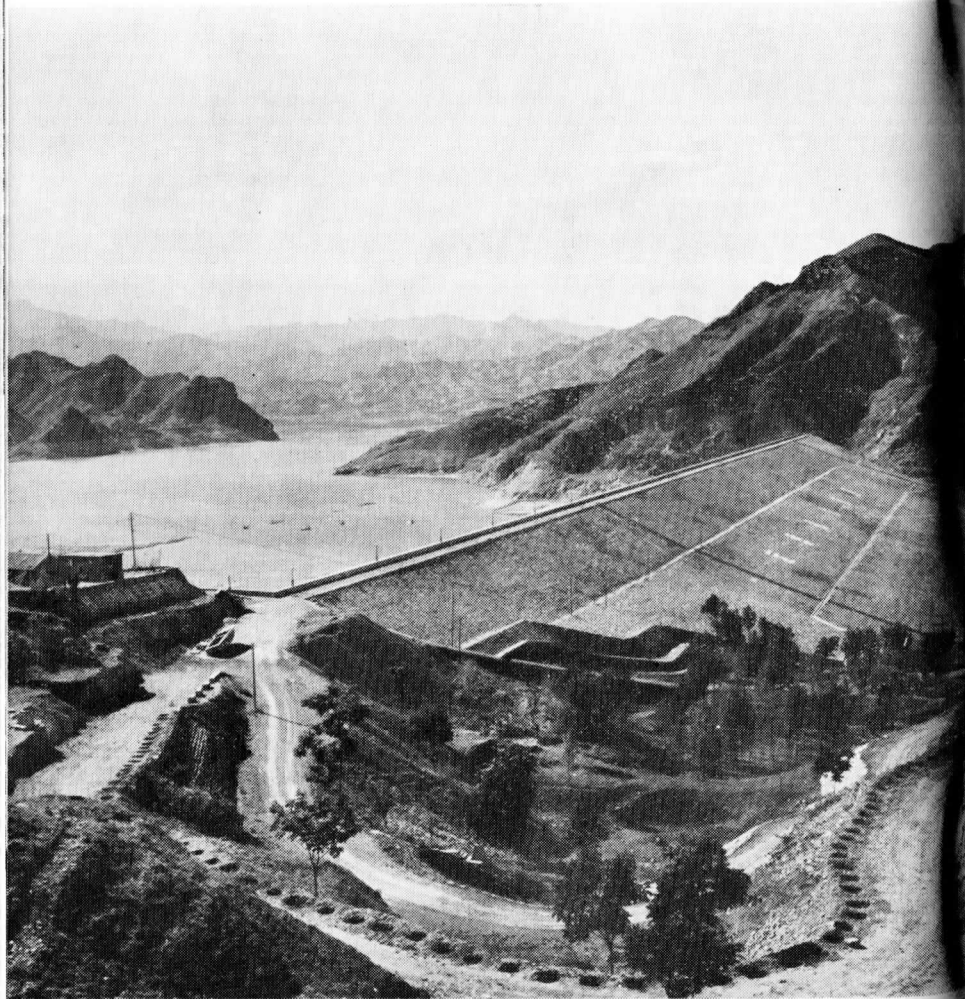
"March 8th"
Drilling Group
at work.



Network of water channels.



A small reservoir.



instances in the ten years; 497 Hopei villages with 42,400 households moved to make way for the new rivers, the state, people's communes and brigades helping the villagers to settle in new houses.

While the peasant workers were on the front line of river control, people in other work formed a supporting rear much as they had supported the people's armed forces during the war years. From every corner of the country came whatever was needed on the worksites. Forest workers in the Northeast used their holidays to fell and float several thousand cubic metres of logs down for the work. The workers of the Nanking Rubber Factory supplied special hoses to the worksite in good time. Each year before the work started the communications department sent in thousands of tons of grain, fuel and building materials by special trains and ships. A thousand workers and staff members from the trade, food, fuel, bank, postal and tele-communications, medical and health services gathered to serve the peasant workers, breaking through out-of-date restrictions and making new regulations in their effort to contribute to the river-control work. When a peasant worker on the Heilung-kang worksite suddenly fell ill and needed medicine not available there, the medical service 100 kilometres away offered to send it and the railway station comrades sent a locomotive to deliver it, saving the patient.

The decade of the Haiho control work was a decade of the people's mutual support and unity in struggle which resulted in their great victory.

Building Up Mountain Areas by Re-arranging Mountains and Rivers

The Taihang Mountains in the west and the Yenshan Mountains in the north occupy half of the Haiho basin. With the exception of the Chaopai River and North Canal which have their headwaters in the Yenshan Mountains, most of the rivers originate in and flow through the Taihang Mountains whose range of high and rugged peaks extend north to south through Hopei and Shansi provinces. The land slopes sharply west-east and the rapid currents cut many ravines in the mountains.

The generations of working people living in these bleak mountain areas, oppressed by successive dynasties' feudal ruling class, were powerless to make any change in the mountains. In the past century, imperialists and Kuomintang reactionaries wantonly felled the trees and destroyed the natural vegetation over vast areas, aggravating soil erosion. Every flood further reduced the cultivated land area and soil fertility upstream, while downstream it clogged the channel with silt, causing havoc. Before the control project, silt from upstream averaged 160 million tons a year, second only to the amount deposited by the Yellow River. The importance

of the river-control work to developing production in mountain areas and reducing flood menace downstream is quite apparent.

Building Reservoirs

A vital part of the Haiho control work was building reservoirs in the mountains upstream. Besides protecting the lower reaches against flood, they provide water for irrigation, power generation, fish-breeding, industry and use in urban areas.

It was not that the people along the Haiho did not want to build reservoirs but, oppressed by imperialism, feudalism and bureaucrat-capitalism in the old society, they could not. When Tientsin was flooded in 1917 and the foreign concessions were affected, the reactionary warlords set up a water conservancy organization of a sort and drew up their so-called "plan to control the Yungting River for all time." They boasted of the "storage ponds" etc. they were going to build, but they never started a single flood detention or water storage project.

In 1951, after liberation and under the leadership of the Communist Party and the People's Government, the people along the Haiho began work on the Kuanting Reservoir — the first large water storage on the Yungting River in the area. The reservoir here, talked about by the reactionary rulers for several decades but never built, was completed in two and a half years under socialism.

In the great leap forward year of 1958, China's water conservancy work kept pace. In accordance with the

Party's general line of building socialism a vigorous mass movement was launched to build reservoirs on the Haiho's upper reaches in the mountains. From Hopei Province alone 700,000-1,000,000 people gathered at one time or another to take part.

It was that year too that our great leader Chairman Mao, Premier Chou En-lai and other Party and government leaders worked together with the masses at the Ming Tombs Reservoir worksite. The news was greeted with excitement and cheering on all Haiho sites and work went on with even greater vigour. The scenes were impressive. Red flags flying in daytime, the sites flooded with light in the evening when night shifts took over. Always the sound of earth being rammed. The militant slogan was: "Make the mountains bow down and the rivers give way!" By 1963 in Hopei, Shansi and Honan provinces and in Peking 18 large, 41 medium-sized and 1,000 small reservoirs had been completed.

In early August of 1963 extraordinarily heavy rains fell continuously in the Taihang Mountains' eastern foothills and peak flows swelled the Taching, Tzuya and Changwei rivers of the southern Haiho system. The ten large reservoirs at Yuehcheng, Huangpichuang and Kangnan in the Taihang foothills prevented flood damage downstream when they checked and stored 4,226 million cubic metres of water, 46 per cent of the total waterflow volume from upstream, and reduced the peak flow by 60-90 per cent. These reservoirs averted the flood menace to the lower reaches and the broad plains. The 12 medium-sized and 63 small reservoirs also played their part in protecting farmland from flood. Reservoir building in mountainous upstream areas entered a new

stage in the decade. Many medium-sized and very many small reservoirs were built. With some state aid but mainly relying on their own collective economy and effort, communes and brigades constructed a group of small reservoirs. One brigade with 200 workers, situated in the eastern foothills of the Taihang Mountains in Hopei, built in five winters a dam 115 metres long and 25 metres high retaining a mountain stream to form a reservoir. These 200 people put in 80,000 workdays and did 80,000 cubic metres of earth-and-stone work. In the ten years this brigade completed an average of one embankment or small reservoir a year. In 1973 Hopei Province had nearly twice as many small reservoirs (a million cubic metres holding capacity) as in 1963. A network of large, medium-sized and small reservoirs—scenic artificial lakes—now benefit the mountain valleys.

The building of the reservoirs only provided the material basis for solving the problems of flood prevention, waterlogging and irrigation so as to create favourable conditions for agricultural development. However, the reservoirs needed also to be managed and used well. To place equal stress on their building, management and use, comrades in charge of some reservoirs relied on the method of combining management by technical personnel with management by the masses and organized the people to protect the reservoirs, channels and ditches. The reservoirs served even better in preventing flood, detaining silt and irrigating farmland, and Hopei was able to use 60 per cent of its surface water. A third of the irrigated land in the province used water from the reservoirs.

Soil Conservation

Chairman Mao reminds us: **“Attention must be paid to soil conservation.”** This is a pre-condition for transforming mountain areas, a task basic to developing agricultural production and an important measure in permanently controlling the Haiho River.

The people in the mountain areas, full of revolutionary verve and with a practical scientific attitude, are still going all out to transform their mountains and harness their rivers. Comprehensive soil conservation measures have yielded good results. Barren hills have turned green, ravines have become artificial lakes or ponds and terraced fields cover slopes.

For example, Hsingtai County in southern Hopei in the eastern foothills of the Taihang Mountains and embracing the headwaters of the Tzuya River system, is mountainous with crisscrossing ditches and land with west-east inclination. Four large rivers flow west-east across the county. Its total area of 2,086 square kilometres is 70 per cent mountainous, 20 per cent cultivated land and 10 per cent villages, roads and river flats. Formerly the hills were barren, trees few and soil erosion serious.

The Hsingtai Party committee investigated and summed up the masses' experience in transforming mountains and harnessing rivers. They found that after the unusually heavy rains in 1963 two canals built by two different brigades acted differently because of different harnessing methods.

One brigade focussed on the canal and only changed a beach, neglecting the slope, with the result that the water washed out the rocks at 23 points and the entire

canal structure collapsed. The other brigade paid attention to both the canal and the slope, particularly the slope. Starting from the watershed they divided the project into three sections. To retard and store water at every step, they dug “fish-scale” pits and built terraced fields, ponds in series and small embankments. They planted the slopes and covered barren mountains with trees. They improved farming methods, used deep ploughing and did a lot of construction work. Fast-flowing streams from the hilltop and slopes were detained and rocks stayed in place. Farmland and crops were safeguarded so that a bumper harvest of grain and fruit was obtained that very year from the re-shaped hills.

The lesson was learned that for water flowing downward the upstream has to be dealt with as well as the lower, that mountains and forests depend on each other as do water and soil, and that to conserve water consideration should be given first to soil, with due attention to hills, water, forest and farmland. The Hsingtai Party committee then popularized their successful method.

Explaining how the method was applicable throughout the county, the masses said that taking account only of the big waste area but not of the vast power of the people to change it was a metaphysical view reflecting a lame philosophy. They said confidently, “All-round treatment is a good method. What one brigade can do, another can do too.” With technical personnel and the masses working together, doing more in the slack farming season and less in the busy season, 80,000-100,000 people began in 1964 battling the barren hills and unruly waters.

A brigade inundated in 1963 had only 0.17 *mu* of rocky land per person. To change this situation, their 60-year-old Party branch secretary led the commune members to a rocky slope where they split the rocks and dug down two metres to build terraced fields at more than 60 levels, each only a metre wide but two metres high. To add to the scant earth on the slope they searched among the rocks, sifted pebbles and even brought the sweepings from their courtyards. Bit by bit they accumulated enough soil to build 420 *mu* of high-standard terraced fields with a two-foot layer of earth, which could be irrigated and drained. The per capita land increased from 0.17 to 0.7 *mu*.

Palikang Ridge on the upper reaches of the Chili River was all rocks and no vegetation. Three brigades there, giving full scope to the superiority of their collective economy and in the spirit of voluntariness and mutual benefit, mobilized a thousand people to change the rocky ridge. Determined to turn it green, they dug into the rock to plant trees. When pickaxes scarcely made a dent they used first 20-*jin* and then 30-*jin* hammers. Four pits a day was one person's limit. After digging the pits they carried in baskets of earth from half a kilometre away and buckets of water from one and a half kilometres. Over several years they planted 401,500 trees on 1,842 *mu* of rocky ridge.

Eastern Hsingtai was a hilly area accounting for a third of the county's cultivated land. To supply it with water from hills to the west, a project was undertaken while transforming the hills. A reservoir with a storage capacity of 28 million cubic metres was begun in the western hills in 1966, with 3,000 peasant workers mobilized to build a culvert four and a half kilometres

long and two metres in diameter. The project, completed in four winter-spring seasons, brought to reality the dream of supplying this large area of farmland with water.

The Hsingtai people in ten years of hard work planted to trees 1.13 million *mu*, 68 per cent of the area suitable for forest. They did this by enclosing 990,000 *mu* of hills and planting 1,400 hilltops. They also built 80,000 *mu* of terraced fields and 5,500 medium-sized and small conservancy projects. The county had succeeded by the end of 1973 in controlling soil erosion in 1,000 square kilometres — 75 per cent of the stricken area. Substantial rises followed in agricultural production. From 1969 the county's grain yield averaged 400 *jin* per *mu* for five successive years, while the 1973 average per-*mu* yield was more than four times the 1966 figure. Considerable progress was made in forestry, livestock-breeding, fishery and sideline production.

In the past the villagers described the mountain area as:

*Hills barren,
Flood wreaking havoc,
Beaches swept away,
Fertile land into sand dunes.*

Now many places present a new picture.

*Green hills and slopes
Covered with pine and cypress,
Crystal clear streams
Rounding cliffs and
Banked by terraced fields of fertile land
Yielding bumper harvests.*

Extensive Land Reclamation

Farm production had always been very low in two adjacent regions in the middle and lower reaches of the Haiho River with similar natural conditions and accounting for a third of the total arable land in the Haiho basin. These are the Heilungkang area of Hopei Province, and northern Shantung Province. Marshy and alkaline, the Heilungkang area had been known since ancient times for its 72 connected swamps; northern Shantung had 200 swamps each covering 10,000 *mu* or more. These areas were plagued by flood, waterlogging, drought and alkalinity one after another. The people here longed to rid the areas of the calamities.

Certain water conservancy works on the main rivers in the Haiho's middle and lower reaches have in the main reduced flood and provided conditions for improving farming by controlling drought, waterlogging and alkalinity to some extent.

But, due to inexperience and interference by Liu Shao-chi's revisionist line, in some places the problem was dealt with in piecemeal fashion. For instance, attention was concentrated on storing water without considering drainage; or, while drainage was considered irrigation was neglected. Such one-sided efforts had

resulted in waste of labour and material without improving the situation.

From the start of the permanent-control project, and especially after the Great Proletarian Cultural Revolution began, the cadres and masses seriously studied Chairman Mao's philosophic works, at the same time criticizing Liu Shao-chi's idealism and metaphysics, making on-the-spot investigations and continually summing up experience of success and failure. They came to understand Chairman Mao's instruction: **"Ensure that there will always be water for irrigation in times of drought and adequate drainage in times of heavy rain,"** embodying the dialectics of water control and reflecting an objective law in water conservancy work. Though conditions are modified by factors such as geographical features, rain and forest, it was realized that mishandling of the supply-drainage relationship can cause damage and that a comprehensive job had to be done, working in the spirit of Chairman Mao's instruction, that is, to serve agriculture, give adequate consideration to all factors that are related to the control of water and to co-ordinate drainage with irrigation, control of water with soil improvement and storing water with checking alkali.

Once the correct ideological and political line was established, work on the projects began to show results and soon every county, commune and production brigade was going all out for large-scale water conservancy, co-ordinating their work with the major river-control projects to form a systematic irrigation and drainage network. Chinghai County in the Tientsin area was outstanding for multi-purpose works controlling drought, waterlogging and alkalinity.

This county, situated in the lowest reaches of the Heilungkang River, is traversed by the Peking-Shanghai railway. It is at the confluence of South Canal and the Tzuya, Taching and Heilungkang rivers. The county also has two diversion canals — the Tuliu and the Machang — which wind through it before reaching the sea. With the railway and the interconnecting rivers as boundaries, the county has nine depressions or swamps of which Chiakouwa is the largest and most vulnerable to natural calamity. An old local saying went: "Seventy-two linking swamps flood one after another; even if 71 go dry Chiakouwa remains under water."

With the construction of major Haiho control works most floodwater and surplus runoff which used to encroach on low-lying Chinghai is diverted eastward more than 50 kilometres south of the county to flow into the Pohai Sea through many newly constructed channels. This substantial reduction of Chinghai's swampy areas ushered in much better days for the people there. A 1,000-member survey team was organized under the county Party committee to learn the laws governing comprehensive water control. It consisted of cadres at county, commune and production brigade levels, poor and lower-middle peasants and technicians.

The county had an irrigation system to supply water by the force of gravity to fight drought and to leach the alkali out of the soil. It had worked for two years, but after that the alkalinity was back and in some places worse than ever. From 1966 the main drainage channels east of South Canal were deepened so that within a few years a 300-metre strip of land along the channels became quite fertile and yielded exceptionally good crops. How had the channels reduced the alkalinity? Leading Party

comrades learned from the poor and lower-middle peasants that the deepening of the channels in effect raised the level of the swampy land and lowered the ground water table. It kept the alkali well below the soil surface. If the ground water could be kept 1-1.5 metres below the soil surface the alkali could not rise and irrigation would leach the soil. The people summed up the situation in a few words: "Alkali rises and falls with the water, irrigation without drainage brings waterlogging and alkalinity; drainage without irrigation leaves the land dry; combining irrigation and drainage increases production."

So, in 1970 the Chinghai people dug a channel 35 kilometres long and 5 metres deep. That winter, after the irrigating was done, the channel functioned as a reservoir for 1,200,000 cubic metres of water to be used the coming spring. During the rainy season it carried the surplus runoff from the fields to be pumped away. The one channel served several purposes. The 10,000 *mu* of barren, alkaline land became arable and fertile. The people gained more confidence and undertook more projects.

Other problems arose. The Chinghai people found that the rivers varied in floodwater volume and rainfall was uneven in all areas. At one time some places were waterlogged while others were arid. They started opening a channel in the southern part of the county to connect the Tzuya and Heilungkang rivers with South Canal. The part of the Tzuya River so diverted helped the production brigades along all three rivers to transform the dry and alkaline areas. With the experience thus gained they dug more channels in the following years and connected all the trunk channels in the county. The result was a network of 51 trunk and more than 300

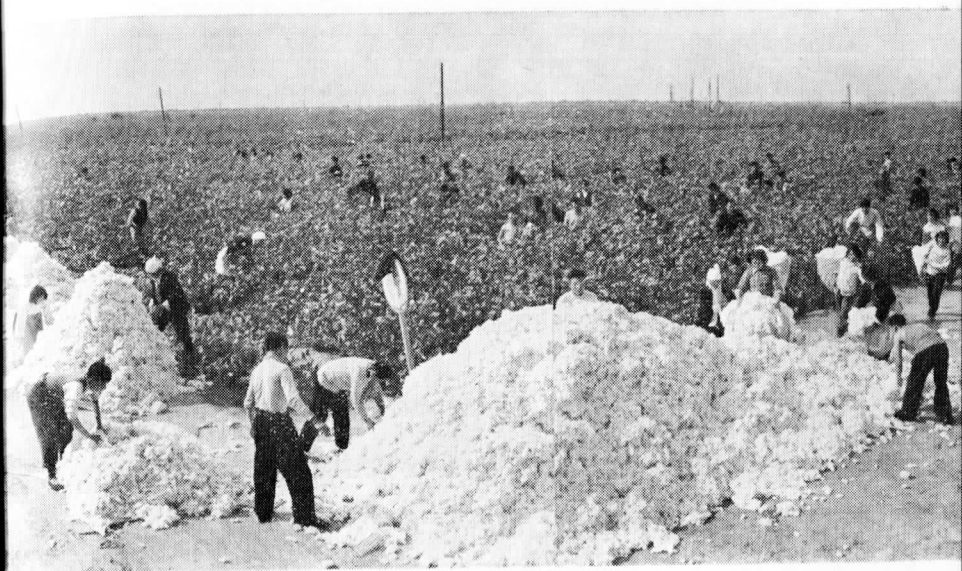
branch channels, 48 big and medium-sized pumping stations and a number of tunnels and dams. This network drained any waterlogged area and irrigated the entire county's fields from one big river. Chinghai County resisted flood in 1972 despite torrential rain in the upper reaches of the Heilungkang River and a flood discharge of 115 cubic metres per second to the Chiakouwa depression. The new pumping stations filled the rivers and channels with water ready to fight drought. The network had clearly proved its worth.

But people remarked, "To control water without improving the soil wastes water," pin-pointing the relationship between the two. While remaking rivers and channels the Chinghai people did not for one moment neglect soil improvement. They had some experience in raising the land level, but as the surrounding ditches were not connected water could not be drained off and salinity could not be reduced. One brigade in the county improved on the method by connecting the ditches around the fields with branch and trunk channels so that every plot could be drained or irrigated according to need. Gradually they built these lands into square garden fields surrounded with paths and trees, levelled them and added soil to cover the alkali. They strengthened embankments, built highways and roads, improved seed strains and used wells for irrigation in addition to ditches. In a few years the brigade's grain and cotton yields both reached the targets (400 *jin* and 60 *jin* respectively) as envisaged in the National Programme for Agricultural Development of 1956-67. The brigade's comprehensive approach spread throughout Chinghai County and many others followed its example.

In recent years, by giving full play to the revolutionary spirit of self-reliance and hard work, the Chinghai people have reduced the poor-soil area from 730,000 to 200,000 *mu*. They dealt with each piece of land painstakingly, fitted each channel into the whole network and, while using all surface water, drilled many pump wells. The county's irrigated land increased from 260,000 to 640,000 *mu*. Chinghai County, which could not grow enough grain for its own use a few years ago, from 1966 had a surplus averaging 23 million *jin* a year for sale to the state and for delivery as agricultural tax.

Chinghai County is only one example. The Heilungkang area and northern Shantung improved their land similarly in the 1963-73 period, with similar results. Not only has farm output increased but drought resistance was strengthened. Rainfalls in the Heilungkang area in the 1961 and 1969 flood seasons were about the same, yet the flooded area in 1969 was 80 per cent less. Aridity in recent years has been combated with the channels and more than 130,000 pump wells which irrigate a third of the land. In northern Shantung too the rainfall exceeded 1,000 mm. in 1971, double the normal and near the 1964 record, yet the area damaged was 75 per cent less than that in 1964. The region has basically built up three large-scale drainage systems with the Tuhai, Machia and Tehhui rivers as the main outlets, connecting networks of more than 30,000 channels and ditches to serve 132 irrigated districts each over 10,000 *mu* in size. A fourth of all arable land was made into fields with assured high, stable yields. The poor-soil acreage was gradually reduced in both areas, the reduction in Heilungkang being more than half of the entire area.

Grain production in both areas shot up. From an area unable to provide itself with grain, all but one of Heilungkang's 47 cities and counties were self-sufficient in 1970. In the drought year of 1972 its grain output remained high. Northern Shantung suffered from drought for ten months running in 1972 and still had a record grain yield.



Cotton grows well on the former alkaline land.

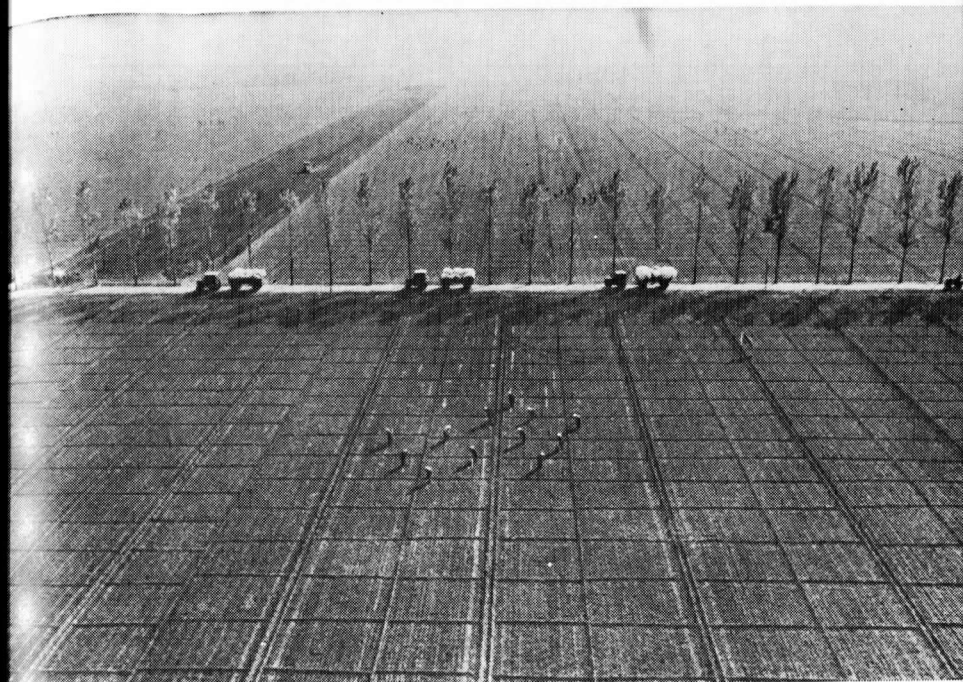


Swampland turned into paddy fields.



Fruit trees cover yesterday's sand dunes.

Wheat fields of Hohengcheng Brigade.

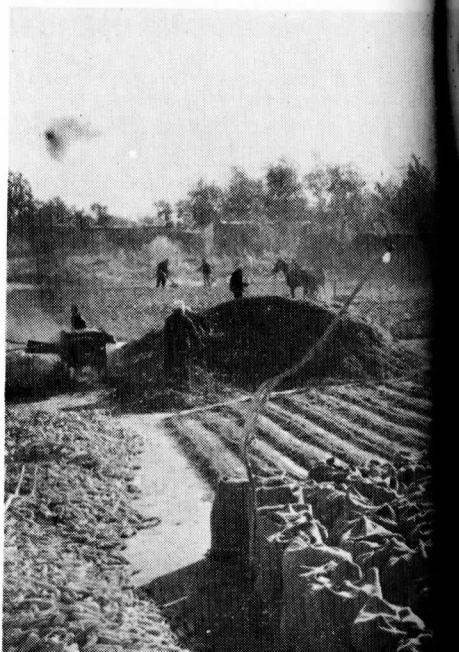


Chengting County's neat garden-style fields.



The Haiho River today.

After ten years' river-harnessing.





Ready for new battles.

Tapping Ground Water Sources

The annual rainfall in the Haiho River basin is approximately 500 mm., 60-70 per cent of which is concentrated in July and August. With this sparse rainfall and its uneven distribution, the area suffered from drought in varying degrees almost every year, seriously affecting agricultural production.

Dealing with both waterlogging and dryness in the work on the Haiho, the localities built reservoirs, dams and pumping stations irrigating more than 270 districts each over 10,000 *mu* in size, while land under surface water irrigation was five times that before liberation. But surface water alone is far from enough. A survey of 139 brigades in one county in Hopei Province showed that 10-12 waterings were necessary to obtain a per-*mu* yield of 800 *jin* of grain. The amount of water needed would be 460-500 cubic metres per *mu*, equivalent to a rainfall of 700 mm., more than the annual amount. This meant that even if the rainwater in the whole basin were stored it would still fall short of the need, and the existing reservoir storage capacity would not hold the seasonal rainwater while a prolonged drought would dry up the reservoirs and rivers. Ground water had to be tapped.

The Party committees at all levels in the Haiho basin have, since 1966, undertaken well-drilling on a mass scale as a year-round job throughout the countryside.

The basin was hit by drought for two consecutive years, the 1972 dry spell of more than 200 consecutive days being especially serious. Reservoirs ran dry, channels cracked and well water levels fell. In some places even drinking water became a problem. Had this happened before liberation it would have been followed by famine disaster, with the corpses of the starved strewn the land. In new China, however, the bad drought did not scare the people of the Haiho basin. Instead, they trolled a song:

*We fight the bad drought in a big way,
To reap a bumper harvest, come what may.
We'll build fine irrigation, never give up
Till nature bows to our intention.*

From the foothills of the Taihang Mountains to the shores of the Pohai Sea, a mass-scale well-drilling campaign swept the entire basin.

During this critical period, Party committees at all levels held frequent conferences on ways to cope with drought. They set up work teams to provide on-the-spot leadership in the worst drought-stricken areas. Each county had its drilling teams—more than 2,000 for the whole basin. Assisted by the commune members, these teams worked round the clock in the revolutionary spirit of “**seizing the day, seizing the hour.**” When the No. 504 drilling team of Wuyi County, Hopei Province, found it took six or seven days to move the equipment to a new site they arranged mutual use of transport means with the various communes and brigades and

reduced the time to one day. And, along with speed, they insisted on quality in well-drilling, practising a “return visit” system under which they dispatched men to check on every well drilled and deal with any problems. Averaging eight and a half days per well, the team drilled more than 150 pump wells in three years, watering 15,000 *mu* of 125 production brigades’ land.

Women played their part, courageously taking their places alongside men in the front lines. Women drilling teams appeared on the scene such as Tsaochiang County’s “March 8th” team of 13 girls all with family histories of blood and tears in the old society. Team leader Chang Hsiu-ying of Taian County, Shantung Province, was granddaughter of a landlord’s hired hand who was killed by hard labour. Her grandmother starved to death and her aunt was a child bride. The family had fled to Tsaochiang County in 1942 as drought refugees. Long hoping that the labouring people would one day overcome the drought scourge, the girls volunteered for the well-drilling work and when someone objected, saying they didn’t have any women on their teams, the girls retorted: “You will when we join!” Their “March 8th” team grew stronger in the fight, taking on the toughest jobs and even volunteering to sink a well in a “forbidden area for well-drilling” where the earth structure was complicated and several teams had failed. They first consulted with the comrades who had tried and with the poor and lower-middle peasants. They examined the earth layers and made their plans accordingly, dealing with the layer of flowing sand and boring through hard rock. It took them about 20 days to drill the 280-metre-deep well. This “March 8th” team showed that women indeed “hold up

half of the sky." They drilled 40 wells, each 250 metres deep, in two years.

Many communes and brigades also organized special teams to support the anti-drought force. By relying on the masses they persisted in their fight, each year involving 300,000 people in the work of tapping ground water sources in the Haiho basin.

The next problem to vex the Haiho people was the lowering of the ground water table, which affected the wells. But, combining revolutionary drive with strict scientific attitude, the cadres and the masses solved this problem too.

Tsaochiang's Party committee secretaries at county, commune and brigade levels started investigating. Their cue came from a shallow, 30-metre well which had been abandoned for years because its water was bitter. About 20 metres of sediment had accumulated at the bottom. Now, with the new, low water table, its water had become sweet. They dug several wells about the same depth and found all had abundant sweet water. A survey was made of the water sources in every brigade of the county and 40 per cent were found to have salt-free ground water in shallow layers. Further studies revealed the extent to which the Haiho River projects, with their irrigation network, had reduced soil salinity in parts of the area. Ground water had all been tapped from deeper strata, de-alkalizing and filling in the shallow and middle strata. This explained the increase in amount and change in quality of the water in some shallow wells. They decided to simultaneously tap water from deep, middle and shallow layers to avoid lowering the water table, as happened when water was drawn from only one layer. More ground water became available in the county so that in

the drought year of 1972 well water brought irrigation to another 100,000 *mu*.

Well-drilling has contributed greatly in fighting drought in the entire Haiho basin. Between 1966, when drilling began in a big way, and the first half of 1973 pump wells increased to 497,000, seven times the number in the area before the Great Proletarian Cultural Revolution. An additional 63,000 wells were drilled in 1972, a record year. Well-irrigated land was expanded to 40 million *mu*, or two-thirds of the entire irrigated area. These wells contribute greatly to the Haiho basin's bumper harvests in bad drought years.

The Haiho River's New Look

In the decade 1963-73 the people in the Haiho basin, united as one and with unyielding revolutionary will, changed the entire Haiho basin. People were practically freed of floods which had threatened them for thousands of years. Ground water resources were tapped and put into use. Agricultural production has improved and with it the people's livelihood. Industrial Tientsin and the capital Peking have become yet grander cities in the Haiho basin.

The "Flood Area" Is No More

Taking its name from the number of villages on the Heilungkang delta where the Fuyang and Huto rivers converge, one place is called "forty-eight villages of Hsienhsien County." It was known in history as a "flood area." During the flood season the turbulent Fuyang and Huto rivers rushed into the shallow and narrow Tzuya River on their way to the sea. The Tzuya overflowed and brought disaster to all 48 villages. Suffering also from drought, waterlogging and alkalinity, they were said to be a miniature of the calamity-ridden Haiho.

Since the Yungping reign (A.D. 58) of the Eastern Han Dynasty there had been records of the harnessing

work in this area. But through more than 1,000 years of dynastic rule "the Haiho River changed its course several times a year," and "great numbers of people died in floods." An emperor of the Ching Dynasty (1644-1911) "drew" this "lesson" from the past experience: "Those who want to tame the river will fail." From that time the area had been designated by the emperor as a "flood area" and in the dark old society was a desolate place where wild swallows flocked and frogs croaked. Peasants there clung with difficulty to a miserable life, often having to go begging.

The change in the 48 villages was dramatic. First came flood control. With the digging of the New Tzuya River east of the villages a flow of 10,000 cubic metres per second was handled. The Hsienhsien County key project at the confluence of the Huto and Fuyang rivers gripped the two rivers like pincers and prevented them from running wild. The "flood area" was eradicated except in extremely heavy rainfall, the New Tzuya River being adequate to discharge the floodwaters into the sea.

Co-operating with the work on the main project, the people of the 48 villages within a few years built 14 trunk and branch canals, and 9 good-sized sluice-gates. Ditches, channels and inlets form a network in the fields. Pump wells and pumping stations water over 70 per cent of the farmland, boosting agricultural production tremendously. Hsuchiawa, the lowest-lying of the 48 villages, was all mud puddles in summer and ice slicks in winter. They got a crop of frogs in the rainy season and a crop of grasshoppers in the dry. Now, however, two big canals run south-north and a riverlet flows east-west that with the opening of a big sluice-gate will empty any flood into the Huto River, while closing the

sluice-gate in drought sends water into the fields through the ditches and inlets. Hsuchiawa, once thought hopeless, now produces fine crops. Yungho Production Brigade, practically free from flood and waterlogging, has experimented with soil transformation, opening the way to high and stable farm yields in the "flood area." In 1972, following severe drought, its per-*mu* grain yield exceeded 800 *jin*. From 1965 the 48 villages reaped bumper harvests for nine years running. The situation has changed from receiving grain from the state to meet the shortage to delivering surplus grain to the state stores.

Yungho and all the other 47 villages have changed. The 70-year-old former poor peasant Lou Chih-ting who had fled the 1917 flood with his father and other villagers returned with his family to his home village after 50 years in the Northeast. Nothing was the same! He could hardly believe his eyes. He picked up a handful of earth, ran to the well for a taste of the water, then stood at the bridge feasting his eyes on the rippling beauty of the vast wheat fields. Comparing all this with the past, he said with emotion: "The river has changed; so have the village, the farmland, the people, and everything! Without Chairman Mao's leadership there would be no 48 villages like this today."

Dry Villages No Longer Dry

When the Haiho River ran wild, low-lying lands were liable to flood, while mountainous areas were left high and dry. Some remote, cold mountain villages had little water for crops or even insufficient for man and beast to drink.

Tashui Brigade is located in southern Hopei Province deep in the Taihang Mountains and 1,000 metres above sea level. The place was strewn with limestones and did not have a single river or well. But its name, Tashui, translates "Great Water." It dates from the Chiaching reign (1522-66) of the Ming Dynasty when serious drought struck the village and the people named it "Tashui" to express their hope for plentiful water. However, in the 400 years up until liberation, every bucketful of water had to be fetched from miles away.

Every Tashui Village family had its tragic story of struggle for water in the old society. In the grave drought of 1920 the earth cracked and no crops grew. The only rainwater cisterns in the village were held by the landlords and rich peasants. Poor peasant Li Chen-pang often had to rise before dawn to fetch water from 20 kilometres away. Once, on reaching home, his clay water jar broke spilling his precious load. The family wept bitterly with anger and hatred, and finally left the village. That year 32 Tashui Village families perished and more than 100 people set out to wander and beg.

Tashui today has altogether 329 water-storage cisterns and ponds of various sizes, truly meriting its name "Great Water." Not only is drinking water assured, but over 400 *mu* of dry mountain slopes have been turned into irrigated terraced fields. Since 1966 Tashui Brigade has delivered to the state a total of 250,000 *jin* of surplus grain and stored 70,000 *jin*. Even more striking are the vegetable gardens on the hill slopes, supplying the commune members with fresh cabbage, cucumbers, eggplants and tomatoes.

Heyukou Brigade is another example of how the mountain villages have changed. Lying east of the Tai-

hang Mountains on the southern bank of the Tangho River, Heyukou has better natural conditions than Tashui. But in the old society it could produce little because the river water flowed far below while the mountain fields above suffered drought. A folk song describes the old situation.

*Heyukou's poor mountains are rugged and stony,
The slopes almost bare.
At the mountain foot fierce flood,
Fields above burning sere.*

The old Heyukou changed with the taming of the Haiho. Large tracts of forest cover the once bare hills and mountains; the sleeping village sprang to life with the hum of pumping stations in the foothills, pipes delivering white-crested water for mountain fields, channels crisscrossing terraces, the long dyke protecting the broad plain.

Inspired by Chairman Mao's call to permanently control the Haiho River, the Heyukou people bent every effort to make the Tangho River irrigate their fields. Digging in frozen earth, they built the 300-metre-long dyke in one winter and spring. They filled in the river flats and transformed them into 40 *mu* of arable land from which rice and millet were harvested that same autumn.

Stimulated by the Great Proletarian Cultural Revolution, the people in Heyukou began their project: leading the Tangho River uphill and using it to generate electric power. In one month they hollowed out a 40-metre-long tunnel and built a three-kilometre-long canal. They set up a hydro-power station, and on opening day the overjoyed people gathered on the mountain slopes

to watch the lights go on and the clear green water of the Tangho gush from the pipes up the hills to flow into the terraced fields. Old poor peasant Wang Chien dipped up a handful of water and exclaimed with tears in his eyes, "This never happened in the thousands of years before!"

To expand the irrigated lands the Heyukou people started transforming Paihua Gully so as to lead its water out where it would irrigate over 90 per cent of the brigade fields. Digging a five-kilometre-long winding channel, the first step, required blasting mountains, the blast holes to be drilled into steep precipices and cliffs—no easy job. Veteran Party member Chang Lin volunteered, declaring both seriously and humorously, "Even a mountain of flames can be conquered. Let me down the cliff on a rope. I'll drill the holes air-borne." Young lads followed Chang Lin's lead and the first burst of explosives soon sounded on the desolate cliff. The canal was finished in 13 months.

Heyukou's agricultural production grew apace and grain output increased each year. In the drought year of 1972 its per-*mu* yield rose to 820 *jin*, three and a half times that before the Cultural Revolution.

Hohengcheng—the "Tachai"¹ of Hopei Province

Hohengcheng Production Brigade in Chengan County, known as the "Tachai of Hopei Province," is a

¹Tachai refers to Tachai Production Brigade of Hsiyang County, Shansi Province, a pacesetter for China's agriculture. In 1964 Chairman Mao issued the call "In agriculture, learn from Tachai."

bright, happy place today. Straight roadways mark off fields into neat squares. Clear water gushing from pump wells flows through a channel network into interplanted grain, cotton and oil-seed fields. Machines in brigade factories whirl as though to sing the praises of the socialist new countryside. But, while enjoying this beautiful picture people cannot forget the Hohengcheng of the old days.

A flood over 1,000 years ago is said to have changed the course of the Changho River, leaving Hohengcheng a vast swamp where for generations the Hohengcheng people lived, constantly threatened by sand and alkali. Winds blew the low-lying swamp and ditches into a white expanse, and though the poor people worked hard the year round they generally ended up by leaving the place forever.

It was only after liberation that, with Party leadership, the poor and lower-middle peasants of Hohengcheng were able to fill in the gullies, level the fields and transform the alkaline soil, making the land produce. The struggle was not smooth. In 1963 the Changho River rose in an unusually big flood that washed out all water conservancy projects they had built in a decade. The Hohengcheng people had to be supplied with 100,000 *jin* of grain from 14 provinces and cities. That winter the people of the Haiho basin began their battle to harness the river.

The Changho River flood was subdued. The people of Hohengcheng, following the example of Tachai's poor and lower-middle peasants, in five winter-spring seasons shifted 80 big sand dunes, filled in 200 pits and ditches, built a 10-kilometre-long drainage and irrigation canal — arduous work involving the removal of 800,000 cubic

metres of earth and transforming the old village into one with fertile arable land.

Before 1963 Hohengcheng's single pump was entirely inadequate to water the crops once the dry season set in. Continued drought in recent years, however, did not deter the people, who believe that "man can conquer nature." They set to work and drilled enough pump wells to irrigate 2,400 *mu*. Abundant water put Hohengcheng in a better position to learn from Tachai. They collected large quantities of manure, developed good seed strains, experimented with intercropping and tried scientific farming, wresting two, three or four crops a year, or seven or eight in two years. Crops are in the ground all the year round, with harvests every month from May to November.

Per-*mu* grain yield exceeded 400 *jin* in 1965, 800 *jin* in 1966 and 1,000 *jin* in 1968. From 1969 the per-*mu* increase in grain was over 100 *jin* a year. For eight years running per-*mu* cotton yield has been more than 100 *jin*.

These bumper harvests enable Hohengcheng to make more and more contributions to the state. In 1966-73 it delivered and sold to the state 1,380,000 *jin* of grain, 1,168,000 *jin* of ginned cotton and 395,000 *jin* of edible oil, not only paying off their state loans but also accumulating 620,000 yuan and storing 280,000 *jin* of grain for the collective.

The life of the commune members steadily improved. Aunt Sun, for example, who before liberation owned no land and hadn't a roof over her head but had to go begging and sell her children, now lives happily with her family. A son and daughter-in-law go on bikes to work in the fields; her grandchildren go to school. The families — eight people altogether, live in two brick houses.

Their annual income from the production team is more than 800 yuan, besides 4,500 *jin* of grain. Aunt Sun never dreamt she'd live to see such a happy old age. She often says: "We owe all this to the leadership of Chairman Mao and the Communist Party, to the taming of the Haiho River!"

Like Aunt Sun, many Hohengcheng families enjoy a better life today. Of the 200 households in the village over 90 per cent have savings in the bank and grain stores at home. The brigade clinic, run on the co-operative medicine basis, is well equipped and provides adequate service. The middle and primary schools have been expanded to give all children of school age a sound education. Electricity has brought light to Hohengcheng. Instructions of Chairman Mao and the Party Central Committee are brought by radio diffusion to the poor and lower-middle peasants home from the fields, while songs of their lofty aspirations are spread.

Chengting, High-Yield Northern County

Chengting County in the vast flat Central Hopei Plain 15 kilometres from Shihchiachuang, capital of Hopei Province, is cut through by the Huto, Chouhan and Laotzu rivers, giving favourable natural conditions. But before the Haiho River's harnessing, it had been a calamity-stricken area. Frequent overflow of the rivers had formed two sandy stretches and alkaline soil. For a long time the county had a low and unsteady grain output, the 1949 per-*mu* yield being around 200 *jin*.

After liberation the building of two big reservoirs in the Haiho upper reaches and the digging of the New

Tzuya River in the lower raised the flood-discharging capacity. From 1963 the Chengting people fought sand and alkali by building a network of water conservancy projects. In a few years they built a 75-kilometre-long wind-break, planted 163,000 *mu* to trees, levelled 230 sand dunes, drilled 4,400 pump wells and transformed 80,000 *mu* of alkaline land into fertile arable fields. The look of Chengting began to change.

Inhabitants of the 18 villages on either bank of the Huto River in the central part of the county before liberation were often driven by flood to wander about with empty stomachs. A saying went: "No girl must marry into the 18 villages." In the Hsienfeng reign (1851-61) of the Ching Dynasty, the whole Tsaochia Village moved in a flood to a place they named "Peace Village." A temple and a stone tablet inscribed with "eternal peace" were erected at the new site, but despite its name and plaque, the new "Peace Village" had no peace either. In the big flood of 1917 boats could go up and down its streets and the "flood-preventing temple" collapsed in the water. Now the treacherous Huto has been turned into a useful river. Its banks have become rich and prosperous places in the county and the 18 villages are joyful, socialist places.

Along the Laotzu River in the northern part of the county was a place called "kingdom of sand." Each spring in the past the winds blew sand over, turning it into a sand waste overnight, dunes building up to the height of a house. Crops were buried or even uprooted and there was no harvest to speak of. Today this "kingdom of sand" has changed into an "oasis." Tree shelter belts stop the wind, clear water moistens the fields, sand is fixed and crops thrive. The six communes in this area

lagged behind all others in the county in grain and cotton output. After the improvement work, the grain and cotton yields of two of the communes have exceeded 800 *jin* and 100 *jin* respectively per *mu*, and the other four are catching up.

Around Chuyangchiao, too, paddy rice and millet ripple in the breeze, clear water sparkles in the streams. Trees line the roads and straight paths cross the fields. As the county records show, rice planting in this area has had a history of several hundred years, but the ruthless feudal ruling class fettered production, floods and superficial ploughing in addition laid waste 500 *mu* of paddy field before liberation. Per-*mu* yield seldom reached 200 *jin*. This "rice country" was on the verge of bankruptcy.

Liberation, and especially the taming of the Haiho, gave new life to Chuyangchiao. In the past the paddy fields were irrigated by springs which dried up when there was no rain, so that the rice crop could not be guaranteed. In recent years, with the drilling of many pump wells, paddy fields expanded to 7,000 *mu*, seven times the pre-liberation figure. Farming technique improved and grain output rose steadily. In the drought year of 1972 the per-*mu* rice yield of many plots surpassed 1,000 *jin*. "South in the North" has been realized in Chuyangchiao.

Chengting County's grain output rises by the year. In 1971 its average per-*mu* yield was 825 *jin*, making it the first northern county to exceed the 800-*jin* mark. In 1972 the people beat bad drought and wrested an even better harvest. The per-*mu* yield of 10 of the 25 communes in the county surpassed 1,000 *jin*, with an average per-*mu* yield of 924 *jin*, its record output.

The Haiho River — from Scourge to Benefit

The flourishing city of Tientsin, situated at the confluence of five rivers in the Haiho system, was disaster-ridden in the past. In the 580 years preceding liberation Tientsin suffered 70 inundations. In 1939, 70-80 per cent of the city's streets were under two metres of water and only boats could get about for two months. Thousands of people died and hundreds of thousands became homeless. After liberation, an unprecedented deluge in 1963 was prevented from rushing into Tientsin by the concerted efforts of People's Liberation Army men and several hundred thousand civilians organized under the leadership of the Communist Party and Chairman Mao, fighting the flood days and nights on end.

Now, torrential floodwaters from hundreds of kilometres southwest and northwest of Tientsin empty tamely into the sea through the New Yungting River and the widened and deepened Tuliu Diversion Canal. The Tzuya River which used to swell the Haiho channel on its way to the sea now turns eastward in the Tsangchou area of Hopei Province and empties through the New Tzuya River. With several new outlets to the sea, the discharging capacity is now six times that before 1963 and a dozen times that before liberation. This historic change is a measure of the achievement in taming the Haiho River and demonstrates the superiority of the socialist system.

The Haiho River, its muddy, brackish water now clear and fresh, is no longer a menace to Tientsin but a great benefit to its industrial and agricultural production and also its sanitation.

Formerly, with no sea walls at the mouth of the Haiho, each tide brought salt water upstream, turning cultivated fields saline in the outskirts and affecting the water used in industry and by city dwellers. The city's waste water had no outlet except into the Haiho. During the dry months the waste water stagnated, was augmented by the in-coming tide and backed up for 50 kilometres through urban Tientsin.

Not so now. A giant tide-retention sluice 188 metres long, 64 metres wide and 11 metres high, with 8 sluice-openings and 16 gates was built at the Tientsin New Harbour in 1958. With control rooms at either end as high as four-story buildings and the top wide enough for three-lane traffic, the sluice stands at the mouth of the Haiho like a sentinel, keeping the salty tide out of Tientsin, storing fresh water from the upper reaches in the river channel and separating fresh water from salt. Pipes totalling 200 kilometres in length along the Haiho banks and a 140-kilometre-long drainage channel in the suburbs cut down the pollution caused by sewage.

Tientsin's industry developed quickly in the two post-liberation decades, with water for industrial consumption alone increasing ten times. A project at Peita Harbour enables the Haiho to store water, and ground water is also being used. In addition, water from the Yellow River was diverted to Tientsin, guaranteeing the supply for industry and city residents. After several drought years the Haiho River level in 1972 was its lowest in history, and in 1973 it dried up for three months. If such drought had occurred before liberation factories would have closed down and a great many people been thrown out of work. But in Tientsin machines kept turning, overfulfilling the industrial quota.

In recent years striking changes have taken place in agricultural production in Tientsin suburbs, with the commune members launching one campaign after another for major water conservancy projects in the mass movement to learn from Tachai. Now a suburban irrigation and drainage system functions around the Haiho River, irrigating four times as much farmland as before liberation, or two and a half times that of 1962. The area around Tientsin is better protected against natural calamities and favourable conditions are given for agricultural development. An unusually heavy precipitation of 200 mm. in the western suburbs in 1970 was handled promptly by the drainage project and a bumper harvest gained.

Peking, New Capital

North of the Military Museum of the Chinese People's Revolution in Peking lies the scenic Yuyuantan artificial lake into which crystal-clear water flows through a wide canal. At Sanchiatien, 25 kilometres upstream west, the Yungting River is cut by a large check dam, then snakes back through a newly dug channel to join the Chaopai River led from the Peking-Miyun County Diversion Project. The Yungting then enters Peking through various man-made channels, abundant, sparkling water circulating through the Peking suburbs like blood in human arteries, bringing growth and freshness.

Peking is generously supplied with water by the Chaopai River in the east, the Yungting River, the Wenyu River and North Canal in the west. Before liberation the

river channels were not dredged, flood-prevention and water-storage facilities were absent, and there were no drainage or water-diversion projects of any kind. During the rainy season floodwater rushed down the mountains and spread everywhere; in winter and spring when rain and snow were scarce the rivers dried up, leaving Peking short of water. Industry and agriculture were retarded; the streets were dirty, trees withered and the lakes were muddy, giving a dingy picture. For a long time people had wished they would one day be free from the rivers' overflow and water would flow into Peking at man's will.

After liberation, with the leadership of Chairman Mao and the Communist Party, the people's age-long wish of turning this harm into a benefit began to materialize. After the Kuanting Reservoir — the first large water storage in the Haiho basin — the Ming Tombs, and the Huaijou and Miyun reservoirs, many big, medium-sized and small reservoirs were built, blocking and storing floodwater of the Yungting and Chaopai rivers and substantially reducing the harm they caused. The water of the Yungting and Chaopai rivers was for the first time led into the city of Peking with the undertaking of the Yungting River Diversion Project, the Peking-Miyun County Diversion Project, the excavation of the Chaopai River Trunk Canal and other major irrigation projects. Consequently, suburban irrigated farm area expanded. The Wenyu River and North Canal were also dredged, freeing the low-lying southeastern suburbs of Peking from waterlogging.

A reliable water source and good-quality water are an important condition for developing modern industry. The harnessing of the Haiho provides this. Records show that after the completion of the above-mentioned two

diversion projects, as many as 70 cubic metres per second of good water flowed into Peking. Clear water has replaced the dirty and stagnant water in the parks and the ditches throughout the city. The streets have become clearer than ever. Abundant water supplies the capital's industries: electric power, iron and steel, chemical, printing and dyeing and paper-making.

Peking's power industry has undergone remarkable changes. Built in the late Ching Dynasty, the Shihchingshan Power Plant in the 50 years before liberation used only water pumped from the Yungting River. As the flow was unstable and water quality poor, every year the plant generated little electric power, benefiting only the royal families, government offices and foreign embassies. On the eve of liberation power generating capacity was 50,000 kilowatts, though actually little more than 30,000 kilowatts were produced. After liberation, Peking's power industry developed quickly. In the Shihchingshan Power Plant alone the installation capacity was a dozen times that before liberation. The city's power output in 1972 was 50 times the output immediately after liberation. Peking is amply supplied with electricity day and night, and even remote mountain villages have electric light and power.

The Yungting River and the Peking-Miyun County Diversion Project, including management, are being continuously improved. Water from the Yungting and Chaopai rivers serves the Shihchingshan Power Plant, Capital Iron and Steel Company, Peking Heat and Power Plant, Peking Steel Plant, Peking No. 1 Rolling Mill, Peking General Paper Mill, Peking No. 5 Paper Mill, Peking Printing and Dyeing Mill, Peking Winery, Peking Experimental Chemical Works, Peking No. 2 Chemical

Works, Peking Organic Chemical Works, Peking Oxygen Works and many others. Some of these are newly built, others are re-built. With abundant water supply they all develop at a fast pace.

Plentiful water supply has been a boon to farms around Peking. Before liberation, less than three per cent of the farmland in Peking's suburbs was irrigated. It now totals 4.7 million *mu*, or nearly 80 per cent. Grain output steadily increased. In 1972 Peking suburbs suffered an unusually severe drought. From March to July the total rainfall of 33 mm. was only 14 per cent of what usually fell in the same period. Yet a good harvest was gained due to the tenacious fight put up by the cadres and masses who relied on the collective strength of the people's communes. The per-*mu* yield of grain still exceeded the target (400 *jin*) set by the National Programme for Agricultural Development. In 1973, despite a prolonged drought in spring, 3 million *mu* yielded 30 per cent more summer crops compared with 1972.

Vegetable production in the capital's suburbs rose sharply. Before liberation most of the vegetable fields were watered from wells using windlasses. The water was poor and the volume small, so that vegetable production was low, the quality poor, and there was little variety. Working people in the city or its suburbs seldom ate fresh vegetables. The pump wells sunk following completion of the Yungting and Peking-Miyun County Diversion Project supply the vegetable gardens with abundant water. This, and the scientific methods applied in vegetable growing, yield four, five or six crops a year on fields which yielded two or three crops before. Peking's vegetable supply is a dozen times what it was before liberation, and there are over 100 kinds. In the

depth of winter Peking's vegetable markets are stocked with fresh cucumbers, peppers, eggplants, beans, celery and tomatoes. With steady water supply many production teams grow vegetables in a planned way to meet the needs of the market and guarantee supply all the year round. Evergreen People's Commune in Haitien District is known for its abundant and steady supply of vegetables for the market. Many communes and production teams are now doing the same, so that there is no longer a slack vegetable season in the capital's markets.

Peking underwent numerous changes in her long history, but not until socialism prevailed in China did she become a truly new city.

* * *

In the past decade, with the guidance of Chairman Mao's revolutionary line, great achievements were made in harnessing the Haiho River which in turn brought about tremendous changes in its drainage basin. But there is still a long and hard struggle ahead to thoroughly tame the Haiho and permanently beat floods and drought. The present flood-diversion channels have yet to pass the test of major floods and the drainage channels need improving. Still greater water sources are yet to be tapped in the Haiho basin to guarantee the irrigated acreage. Soil erosion in mountainous areas needs to be further checked.

So the people of the Haiho basin are confronted with new tasks. They are determined in the next decade to draw an entirely new picture in the vast expanse of north China, to make a still newer and fresher Haiho!

海河巨变
何津

·
外文出版社出版（北京）
1975年（32开）第一版
编号：（英）15050—14
00085
15—E—1342P

