

China Dam: Scenic Loss, Power Gain

The narrow river cuts through 10,000 ragged mountains that vie for heaven or seem ready to fall. . . . The scene is extraordinary beyond description.

—Lu You, "A Journey to Sichuan," AD 1170

By DAVID HOLLEY,
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SANDOUPING, China—Wei Guangming sat in a third-class cabin of a boat passing through the Yangtze River's famous Three Gorges and reflected on the possibility that they may be flooded forever.

"As long as the new dam can promote our nation's development, scenery isn't so important," said Wei, a young worker from a river town. "Filling stomachs is what counts."

China's leaders, perhaps with a few twinges of sadness for what would be sacrificed, appear to share Wei's views.

Decades of Dreams, Plans

The Three Gorges have been celebrated for many centuries in the literature of China and in the hearts of its people. But now, after decades of dreams, studies, plans and preparation, the government stands on the verge of approving this spectacular strip of river and mountain as the site for construction of the world's largest concrete dam.

The proposed dam—475 feet high and 1.6 miles long—would be the biggest hydroelectric producer in the world, its planners say. It could transform the economy of central China, eliminating power shortages and easing transportation.

It also could save tens or hundreds of thousands of lives by controlling the devastating floods that can occur when heavy rains hit the upper reaches of the Yangtze, as has happened again and again over the centuries. The roiling waters of the gorges, where the Yangtze slices past sharp cliffs and soaring green peaks to descend out of Sichuan to the plains of Hubei, would be calmed and broadened.

Would Create 350-Mile Lake

Lost would be some of the mystique of a natural landmark at least as important to China as the Grand Canyon is to the United States. The cliffs would no longer soar so high above the water. The turbulent river would become a long narrow lake stretching 350 miles from the dam to the city of Chongqing (known as Chungking when it was China's World War II capital).

Many people throughout China would share a profound sense of both pride and loss.

"These gorges were created over tens of thousands of years, and the environmental and scenic destruction from building the dam would be so great," lamented a passenger on the Yangtze river boat, who declined to give his name.

Along the river, the homes, factories and farmland of 725,000 people would be submerged. All would need new housing, and many would need new jobs. Some uprooted peasants would become factory workers, while others would be assisted in turning to intensive

cultivation of oranges or other cash crops.

Two-thirds of Wanxian, a city with a population of 140,000, would be destroyed.

Total construction and relocation expenses would be at least \$8 billion, with some critics suggesting that costs could run more than twice that much.

The payoff would likewise be immense.

The project would generate 18 million kilowatts of electricity, 40% more than the capacity of Brazil's Itaipu Dam, now the world's largest hydroelectric producer.

Barges with three times the tonnage of those now able to pass the gorges would be able to reach Chongqing, a city with a total urban and nearby rural population of 14 million, thereby vastly increasing the access of the city and surrounding regions to world trade.

The dam also would be of key importance to flood control.

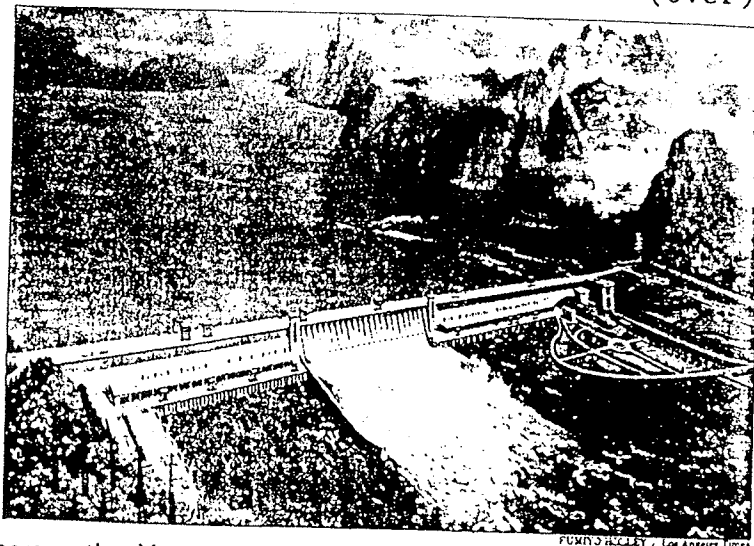
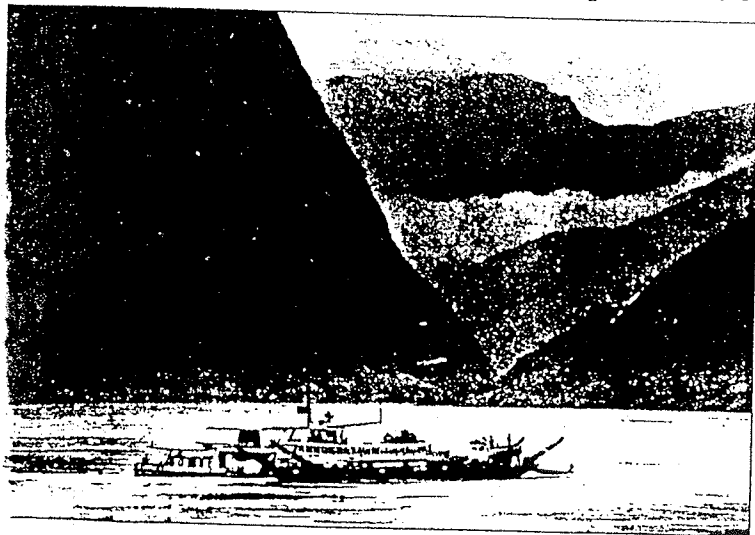
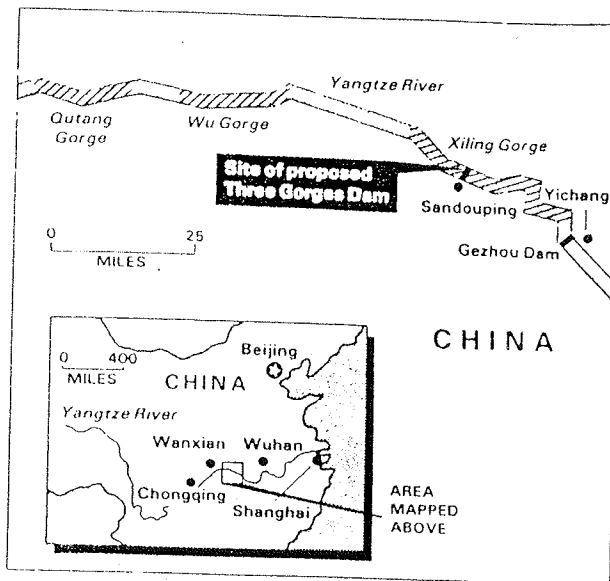
A Yangtze River flood in 1931 took 140,000 lives, while an 1870 flood was even more destructive. The last big flood, in 1954, also caused extensive casualties and material losses. Dikes along the river have been raised 6 to 10 feet since 1954, but this is still not considered enough to provide security against a massive flood. Raising the dikes even higher is viewed as impractical and prohibitively expensive.

Without the dam, according to officials of the Yangtze Valley Planning Office in Wuhan, a repetition of the 1870 rains could kill hundreds of thousands of people along the lower reaches of the river.

Minimal Impact Seen

Advocates of the project insist that the environmental impact,

(over)



A ferry barge pushed by a tugboat transports two buses across the Yangtze River in the Three Gorges area; at right, an artist's depiction of the massive concrete dam across the river.

(continued)

aside from the area flooded by the dam, would be minimal, and that because the mountains rise so high above the river, there would be little or no damage to the beauty of the gorges.

As early as 1921, China's revolutionary leader, Sun Yat-sen, promoted the idea of building a dam in the Three Gorges. After World War II, engineers from the U.S. Bureau of Reclamation studied the proposal with officials of China's Nationalist government. In the 1950s, Soviet engineers helped with feasibility studies that included the drilling of exploratory shafts at the proposed dam site to study the granite bedrock on which a dam would rest.

China's poverty and lack of technical expertise, its wars, its political struggles and its need to devote resources to other priorities always stood in the way of construction.

But in what was partly a dress rehearsal for building the Three Gorges dam, the smaller but still massive Gezhou Dam has been built about 7 miles downstream from the eastern end of the gorges. Filling of the reservoir, power production and use of ship locks started in 1981, a decade after construction began, but final work was completed only two years ago. Electricity from this dam, which raised the water level about 75 feet, would help pay for the Three Gorges project.

Chinese and foreign experts are now in the final stages of studies intended to demonstrate the technical and economic feasibility of building the Three Gorges dam. These studies are to go to the State Council, China's Cabinet, before the end of this year.

"There is a very strong possibility they will approve it," said Ji Changhua, vice commissioner of the Yangtze Valley Planning Office in Wuhan, which has primary responsibility for planning the project.

China's top leader, Deng Xiaoping, signaled his position two years ago, when he declared that although a final decision had not been made, the merits of the project outweighed the costs.

Officials in Chongqing, Wanxian and Wuhan now talk as if the final go-ahead is likely in 1989 or 1990, with construction beginning by the end of 1990. Plans call for production of electricity to begin 12 years after the start of construction, with completion of the project scheduled in 18 years.

One of the studies due to be delivered to authorities in the next few months is a feasibility study funded by the Canadian International Development Agency, which is being conducted under the supervision of a committee formed by China, Canada and the World Bank. If the project goes forward, as much as \$1 billion of the total cost is expected to come from foreign loans, which would be used to buy from overseas such items as construction equipment and generator turbines.

Near the dam site, located about 20 miles west of the eastern end of the 120-mile-long Three Gorges, high-rise apartment buildings have recently been constructed for the engineers and technicians who would oversee the project. A new concrete road is also being built to the site, which is located near the village of Sandouping.

The dam would stand in the middle of the 40-mile-long Xiling Gorge—the easternmost of the Three Gorges—where the river broadens to about 1.5 miles in width. In the narrow parts of the gorges, the river is only a couple of hundred yards wide.

The dam would raise the water at the dam site about 360 feet, and in many places the new lake would be about twice as wide as the river is now.

A five-step series of ship locks would be cut through the mountainside on the north bank to handle most freight and some passenger traffic, while a separate ship lift—a single, extremely deep lock—could more quickly raise or lower passenger boats the full 360 feet between the lake surface and the river below.

Critics Discouraged

Critics of the project—who worry about cost, technical feasibility, silting and the massive relocation effort as well as damage to the environment and scenery—have taken on an air of near desperation, raising their pleas for top decision-makers to give critical views an impartial hearing.

"Even the United States, the most scientifically and technically advanced country in the world, has never built a hydroelectric project of this magnitude," Qian Jiaju, an outspoken Chinese economist, cautioned in a May article published in the pro-Beijing Hong Kong newspaper Wen Hui Bao.

Qian concurred with a comment that he attributed to Zhou Peiyuan, a prominent physicist who has also criticized the proposal: "We cannot fully predict the impact on society and the environment. Should something unexpected go wrong, we would leave an incalculable legacy of troubles to future generations."

Qian complained that although the Three Gorges dam was an important topic in group discussions at this spring's meeting of the Chinese People's Political Consultative Conference—an essentially powerless advisory group that serves as a forum for examination of national issues—the government-controlled media was not allowed to reveal anything about these debates.

"Before the meeting began, the media received instructions that reports about the Three Gorges project must be strictly controlled," Qian wrote. "They [unidentified authorities] said that not only Chinese experts have agreed to go forward, but foreign experts also feel it is all right to proceed, and therefore they don't want any more obstruction from the opposition."



A view of Wanxian; the proposed dam across the Yangtze would flood this city to the top of the steps in the background.

If the central government decides to move forward, the people along the river can be expected either to cheer the effort on or quietly to acquiesce. China has no strong environmental movement or tradition of resistance by local authorities capable of derailing a project of this magnitude once a decision is made to proceed.

"We will lose two-thirds of Wanxian City," Tang Zhangjing, an official of the Wanxian regional government, said matter-of-factly in an interview. "We are willing to make a sacrifice for the interests of the country. This is our guiding philosophy, and how we educate the people."

A newer, bigger and better Wanxian will be rebuilt on higher ground, Tang added.

"This will be an excellent deep-water harbor," he said. "Wanxian will become the center for development of this whole region, stretching from Shaanxi province on the north to Hubei province on the south."

Officials in Chongqing are enthusiastic boosters of the project, for the impact on that much larger city would be almost entirely beneficial.

"Our goods and materials could be transported directly from the river to the sea and on to foreign countries, and the volume would be very substantial," said Yang Biao, managing director of the city's Three Gorges project office.

Most urban residents due to be relocated appear to believe that the project would benefit them personally as well as the nation. In a society where most housing and jobs are assigned by the government, people seem comfortable with the idea of depending on the government for satisfactory new arrangements.

Attracted by New Homes

The prospect of new and perhaps more spacious homes is the main

attraction, and many point out that in any case, they have no voice in the matter.

"We'd prefer to be flooded out by the dam," said Wang Wanlun, owner of a tiny noodle shop in Wanxian. "As long as the government can offer us another place where we can reopen this business, we're happy to move."

Lu Wei, a young man who lives with his parents in a run-down single-story tile-roofed wooden home in Wanxian, is part of a small minority of people who own their homes. But even so, Lu seemed surprised when asked whether he would be happier to keep the old family home or get a new place from the government.

"Of course, a new house is better than an old house," he said.

In the countryside and villages, however, there may be a greater sense of loss.

"If they build the dam, our Sandouping won't exist anymore," a shopkeeper in the village at the dam site said with an apparent touch of sadness that seemed lacking in the comments of urban residents.

The man had not heard of "New Sandouping," the name of a new hamlet a couple of miles downstream where Sandouping residents would be moved if their village became the site of cement factories and construction activities.

"Some peasants have a strong feeling for their ancestral land," acknowledged Tang, the Wanxian official, "but the state will give them better living conditions in new places, and make it possible for them to have better lives. I think they will be happy with their new conditions."

Gao Fajin, a peasant butcher selling pork at a stall in Sandouping, said he looks forward to more noise and excitement.

"I'll raise pigs for the construction workers," Gao said.