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In Chinese Dam's Wake, Ecological Woes

Landslides, Relocation of Residents Among Costly Drawbacks of Yangtze Project

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MIAOHE, [China](#) -- It was in this little village clinging to cliff sides over the Yangtze River that the environmental costs of China's Three Gorges Dam began to add up, a down payment on what experts predict will be billions of dollars and years of struggle to contain the damage.

The first sign was just a crack in the terraced earth, about four inches wide and 35 feet long, villagers said. But engineers found that the crevasse betrayed the danger of a massive landslide. They judged the risk so great that most of Miaohe's 250 farmers were temporarily evacuated. Fearing the hillside would never be safe again, the government started constructing a replacement village on a nearby plateau, blasted out of rock for increased stability.

"This is going to be good," said Han Qinbi, 60, a grizzled peasant who pointed at the spacious new house he and his family will be moving into next summer.

But what Han saw as good fortune was a bad omen for the Chinese government. In the 18 months since the Three Gorges Dam was completed, increasingly clear signs of environmental degradation have started to accumulate along the Yangtze, just as activists had warned. Among the most troubling have been incidents of geological instability in the soaring gorges that now embrace a reservoir stretching behind the dam across a good portion of Hubei province 600 miles southwest of Beijing.

Local officials acknowledge that dozens of major landslides have been recorded, affecting more than 20 miles of riverbank.

The Chinese, who had been talking about taming the Yangtze for a century, finally realized their dream of the Three Gorges in May 2006, when the dam was declared finished in a burst of national chest-thumping. From the beginning, Communist Party officials had acknowledged that the massive engineering project would entail environmental risks and upset the lives of riverside peasants. An estimated 1.2 million were forced to move to make way for backed-up water. But the damage could be controlled, the party and government insisted, and overall, the benefits still would outweigh the dangers.

The \$24 billion dam played its assigned role in controlling the river during the annual flood season this summer. Moreover, the 7,575-foot-wide (almost 1.5-mile) structure has dramatically increased China's supply of clean electricity, producing 23.7 billion kilowatt hours in the first half of this year. The reservoir and swollen upstream river waters,

reaching about 250 miles to Chongqing, have given the center of the country a trouble-free transportation lane.

But the breaking-in period has also shown how vast the environmental damage is likely to be -- and how expensive to handle. Lei Hengshun, an engineering professor at Chongqing University who has followed the Three Gorges project since its inception, said it has opened a "bottomless pit" of government expenditures that will have to go on for decades.

A group of hydraulic engineers and environmentalists reported in March that the overall number of landslides in the area, including small ones, surpassed 4,700, requiring reinforcement or evacuation of 1,000 localities.

Higher and less stable water levels behind the dam, now at almost 500 feet above sea level and scheduled to rise to 575 feet, already have altered pressure bearing on the base of majestic cliff sides, they explained, causing the perennially unstable ground to give way more often up and down the reservoir.

Along the cliff-side road to Miaohe, on the south bank about 20 miles upstream from the dam, a man with a shovel patiently repaired one such slide on a recent afternoon. Just across the river, on the north bank, a small ferry landing had been buried under another slide, forcing travelers to climb over a mound of earth to board. Concrete reinforcements have been erected nearby to keep both lanes clear on the main east-west road along the north bank.

"The negative effects of the dam are starting to appear, one by one," said Wu Dengming, who runs the Green Volunteer League of Chongqing and has long warned about what the dam would do to the river's fragile ecology.

In addition to the landslides, he noted, industrial pollution, fertilizer runoff and waste from Chongqing and other cities have thickened in the backed-up reservoir waters, just as he and others predicted they would. Downstream, he said, Shanghai has noticed seawater moving inland because of a change in the flow of water carried down the river on its 3,900-mile journey from Tibet to the East China Sea.

Lei, the Chongqing University professor, was among a group of government officials, environmentalists and engineers who warned in September that a "catastrophe" could befall the Yangtze River unless the government faces up to the environmental ills intensified by the dam and takes the costly measures necessary to confront them.

"It cost a lot of money to build the dam, and now it's going to keep on costing a lot of money," Lei said in an interview.

The two-day forum that produced the alarm was remarkable for its open challenge to the government's long attempt to minimize dangers raised by the Three Gorges Dam. "The environmental danger must be confronted," said Lei, a former official who always supported the project and still does. "We said that to the officials very clearly. Since the dam is already finished, you have to face the environmental problems and not try to fool yourself about them."

Equally remarkable were reports in the government-controlled press that clearly described the expressions of concern from Lei and other experts. The New China News Agency, which distributes only authorized news, quoted officials as well as experts warning that the lives of people living along the reservoir would be in danger unless the geological instability is dealt with.

"This is the first time the government has publicly admitted the serious environmental problems caused by the Three Gorges Dam," said Wu, the Chongqing activist. "If they had from the beginning grasped how damaging the dam would be, they would not have constructed it."

The project was decided by a generation of party leaders trained as engineers and eager to demonstrate the country's prowess in taming nature. Then-Premier Li Peng in particular promoted the dam in the early 1990s, dismissing its opponents as part of the democracy movement that had blossomed in the 1980s and was crushed at Tiananmen Square in 1989.

In that political context, officials long sought to play down the environmental dangers inherent in the biggest engineering feat in China since the Great Wall. Party censors made sure the focus was on the economic benefits and national prestige that would grow from such an accomplishment.

The relocation of farmers forced to move from low-lying villages generated widespread corruption as local officials distributed -- or not -- resettlement payments from Beijing. Regional planners in Chongqing have estimated that several million more farmers will probably end up voluntarily moving out of riverside villages into Chongqing's main urban sphere over the next two decades as the area increasingly industrializes.

Back when the dam was being designed, such problems were seen as an unavoidable part of China's modernization, Lei said. But a new generation has taken over in Beijing, he noted, seeking to balance economic progress with other concerns, including its impact on China's 700 million farmers.

President Hu Jintao and his premier, Wen Jiabao, have begun emphasizing the need to take environmental dangers into account when making such big economic and engineering decisions. Tellingly, Hu also has seen to it that his photo is not displayed at the Three Gorges exhibition hall among those of dozens of Chinese leaders who have visited the dam to congratulate its engineers and bask in its glory.

But whether he and his successors will spend the money necessary to deal with damage behind the dam over the years to come is the question that environmental activists such as Wu are asking. So far, Miaohe's little disaster has not been expensive. The village party secretary, Li Facheng, 45, said that each family got \$400 as resettlement aid and that the local government is spending about \$5,000 on each of the new houses.

But for the future, Du Chenglong, a 30-year-old Miaohe native, noted, "Our village is famous for landslides."