The Three Gorges Project—an Error in 'Democratic Decision-Making'

By Zhou Ren

GERMANY — After eleven and a half years, the construction of Three Gorges Dam located on the Yangtze River at Sandouping of Yichang City, Hubei Province was officially completed on the morning of May 20, 2006.

Despite intense debate in China and abroad over whether to launch the Three Gorges Project, the deputies at the National People’s Congress voted to proceed with construction of the dam in 1992.

Prior to the completion of the project, The Epoch Times interviewed Dr. Wang Weiluo, an expert in national land use and planning. Dr. Wang graduated from Nanjing University with a major in urban and rural development planning and later earned his master’s and doctorate in engineering in Germany. Afterwards, he taught open planning and engineering evaluation at University of Dortmund in Germany. For several years, Dr. Wang also participated in the planning phase of the Three Gorges Project.

Dr. Wang Weiluo has expressed great concern over the Three Gorges Project and wrote articles on the issue for international media. After the Chinese communist officials decided to go forward with the Three Gorges Project, he released a book to re-evaluate the project, entitled Fortune and Misfortune.

From an engineering perspective, there are irresolvable conflicts in the Three Gorges Project. Dr. Wang believes the final decision to launch the construction of the Three Gorges Project was purely a political move by the Chinese Communist Party (CCP). The decision to proceed with the project was based on an undemocratic and unscientific evaluation of evidence. Dr. Wang cautioned that the construction of the Three Gorges Dam would cause havoc on the ecosystem and create a series of social problems, and the project would have to be abandoned at the end.

The following report is based on a recording of the interview.

'Be Prepared to Deal with the Consequences to Chongqing City'

The greatest problem with the Three Gorges Project is the issue of flooding. The water surface of the reservoir is not flat as imagined, but sloped—meaning there is a water surface or hydraulic gradient for water to flow from upstream to the downstream. If there were no slope of the surface of water flowing in an open channel, the water would not be flowing. In general, variation in water surface levels is invisible to the naked eye. In 1992,
when Li Rui, Mao Zedong's former secretary, was informed that the Chinese communist regime decided to construct the Three Gorges Dam, he wrote a letter to the CCP leaders, suggesting that the Chinese government "be prepared to deal with the consequences and damage to Chongqing City."

With the smaller hydraulic gradient, the sediment would be deposited around some areas within the reservoir, and years later, the reservoir would be filled with the sedimentation. Therefore, the Three Gorges Project sediment team argued that there would be a hydraulic gradient in the area of the reservoir. Through calculation, it was determined that the gradient should be 0.7/10,000, so there is a seven-meter height difference per 100 kilometers. Since the length of the Three Gorges Reservoir totals over 600 kilometers, the height difference in water level from one end of the water storage to the other would be over 40 meters.

The final step of the Chaotianmen Dock in Chongqing City is at an altitude above that of the railways for the Chongqing train station. In addition, the altitude for certain parts of Chongqing is even at a lower sea level. If the Three Gorges Project were used for flood control, the water level of the Three Gorges Reservoir would reach 175 meters, but the water level at Chongqing would surpass 217 meters above sea level (175 meters + 0.7/10,000 x 600 km = 217 meters). This means that the Chongqing train station and all the railways and highways leading into and out of Chongqing, as well as the Chaotianmen Dock would be flooded. Many cities and towns near the Three Gorges Reservoir, including the roads, bridges and newly-constructed towns for migrants would also be flooded. If such a flooding occurred, who would take responsibility? This is what Li Rui meant by "be prepared to deal with the consequences and damage to Chongqing City."

**Red Line of The Flood level**

In a proof debate over the Three Gorges Project, the migration team proposed a red line of the flood level as a guide to relocate local residents. Since the normal water level of the Three Gorges would reach 175 meters above sea level, a contour line was drawn on a map, indicating that the areas below 175 meters would be flooded. Most people with limited knowledge about the project assume that areas 175 meters above sea level would be safe, while residents below the contour would have to be relocated. All of these assumptions are based on the premise that the surface of water flowing in the future reservoir is flat.

Water can flow from an upstream region to a downstream region because of a hydraulic gradient. Without the difference of the water elevation, no flow would occur, and the Three Gorges Dam would be unable to generate electricity since there would be not enough potential generating capacity from pressure exerted by the water.

Since it was believed that the water storage elevation of the Three Gorges Reservoir is constant, then why was the decision to construct an essentially poor functioning dam accepted and proved?

The only explanation is that proposal for establishing such a huge dam was put forward by one dictator, and others were too scared to point out his mistake. The dictator who proposed the Three Gorges Project is Li Peng, former chairman of National People's Congress. Since Li Peng already made up his mind and drew his conclusion, scientists and other officials at various rankings did not dare to contradict him.

**A Self-contradictory Conclusion**

If the reasoning and proof reports submitted by 14 individual teams were carefully studied, many self-contradictory facts surface. For example, the migration team claimed that the water storage elevation of the Three Gorges is constant, while the sediment team and the shipping team stated that a hydraulic gradient exists.

The sediment team believed that the dam could "wash away sediment during floods and to retain water during droughts" to solve the problems caused by sediment deposits. They thought that since the dike of Yangtze River under the dam is very sturdy and sediment concentration is very high during flood season, the water pressure could actually wash away the sediment. Meanwhile, the sediment concentration is low during drought season, so the water will be reserved for electric power and shipping.

The flood prevention team, however, held the opposite opinion. They suggested that the dam be used to collect sediment during flood season. The team claimed that the Three Gorges reservoir has a storage capacity of 22.1
billion cubic meters and is well able to contain a flood. It could reduce flooding in the lower areas of the Yangtze from once every 10 years to once every 100 years. They argued that flood prevention was the greatest benefit of the Three Gorges Project.

According to these two different conclusions, which function will the Three Gorges Dam perform when a flood occurs—retain water for reducing flood peak or drain out sediment?

The premises of the migration team and sediment team contradict. The migration team drew the conclusion thinking that the water storage elevation of the Three Gorges is constant, while the sediment team drew their conclusion on the basis a hydraulic gradient exists to wash out the sediment. The Central Committee of the CCP only paid attention to the conclusions of the reports and ignored the premises. Therefore, the final conclusion was that “Draining off sediment during a flood and retaining water during drought season could solve the problems caused by sediment deposition. The Three Gorges Dam could help to upgrade flood prevention strategies in the lower reaches of the Yangtze River. The population requiring relocation would be only about 1.13 million.”

The incorrect strategic decision lies in these contradicting premises. Most serving officials of the Chinese communist regime are in favor of the project, while most retired officials are against it. For example, Hu Yaobang, the General Secretary of the CCP in 1984, agreed with the project in principle, while Li Rui, Hu’s fellow villager and colleague, was punished by the CCP because he published books against the Three Gorges Project. Hu Yaobang even gave Li Rui his disciplinary punishment in person. Yet, after Hu Yaobang left office, he apologized to Li Rui and wrote a poem revealing his disapproval of the Three Gorges Project.

A Political Project in Essence

The Three Gorges Project is actually a political project. The decision-making was under a special situation shortly after the June 4 Massacre in 1989.

In 1989, the first inspection Jiang Zemin carried out after he came to power was the Three Gorges Project. It was a declaration of his stance—expressing that he was in the same league as Li Peng, the helmsman of the June 4 Massacre. In Li Peng’s diary, he expressed heartfelt thanks to Jiang.

After the June 4 Massacre, the Chinese people felt very alienated. The Three Gorges Project was chosen as the one attempt to fill people with enthusiasm. The Three Gorges Project was constructed as a patriotic propaganda exercise. In the Three Gorges Park, a monument engraved with one of Li Peng’s poems was put up by China Three Gorges Project Corporation in his honor. Li Peng was very satisfied with it when he made a special trip to the Three Gorges to see the monument. The Three Gorges Project may be considered as an attempt to build up the images of some of the CCP’s leaders.

A person in charge of the International Rivers Network, a non-profit organization that works to protect rivers and the rights of those who depend on them, called the Three Gorges Project “a product of Stalinism.” Most people and governments around the world oppose the project—but this is the opposite in China. Before 1989, articles opposing the project could be found in popular newspapers and journals, but after 1989, only articles favoring the project could be found in Chinese publications. Since all opposing articles could not be published in China, many Chinese people are not familiar with the history of debate surrounding the dam project. Professor Huang Wanli, a well-known water conservation expert at Tsinghua University, was labeled “right wing” by Mao Zedong for opposing the construction of Sanmen Gorge Dam on the Yellow River. The failure of the dam several years later proved that Huang’s view was correct. No one was willing to publish Huang Wanli’s articles at that time, so he and his family used their money to publish them independently.

Huang is now a vocal opponent of the Three Gorges Dam, and his views are still being censored. The Chinese communist regime professes that the debate around the building of the dam has been fair and democratic, but there is evidence to the contrary.

As one example, Professor Zhang Guangdou, who favors the project, was made an important part of the decision process and awarded a prestigious post, but Huang was excluded from the entire process. Professor Huang wrote three letters to Central Committee officials detailing his reasons for opposing the dam, asking for a 30-minute
audience to explain his point of view. He was never granted that opportunity. The future generations of Chinese who have to bear the consequences of the dam's construction may come to regret that Huang was not allowed that 30-minute speech.

Among the 412 experts on the dam construction committee, nine formally documented their opposition to the dam being built. One of these is Mr. Lu Qinkai, the former director for the division of long-term planning of the Ministry of Water Resources. He authored a joint letter of opposition with a member of the Chinese People’s Political Consultation Conference. From 1998 to 2000, Mr. Lu wrote joint-letters with many other well-known scholars to the Chinese communist regime and presented their opinions for saving the project. For example, they proposed not to block the flood-discharge holes located downstream of the Yangtze River. Their advice went unheeded.

If Terrorists Blow Up the Dam

In 1958, when the central committee of the CCP decided to construct the Three Gorges Dam, the Chinese State Council asked General Zhang Aiping to lead a group to investigate any security risks the dam might pose. After several years of research, the group concluded that they were, “unable to guarantee the safety of the Three Gorges Dam.”

During the debate about the project in 1986, the military reversed their conclusion and supported the construction of the dam, but General Zhang always held to his original stance. The committee based its decision to build the dam despite the submitted safety concerns on two, somewhat questionable, premises.

The first is that war has its omens. Modern warfare does not consist of sudden attacks—there is some warning beforehand. In the instance of a pending attack, the dam water could be drained in two weeks, eliminating its capacity to cause widespread damage.

The second premise reasons for the use of nuclear weapons in any counterattack to a United States invasion. They figure that even though the U.S. has a more powerful military, all China needs is to possess sufficient nuclear might to destroy the United States to offer a sufficient deterrent to attack. During the debate, it was pointed out that the biggest safety concern posed by the dam is its possibility of becoming a terrorist target.

What the logic of the first premise overlooks is that if the water were suddenly drained from the reservoir, whether intentionally over the course of a week or two, or suddenly by a bomb blast, the surrounding area would suffer intense flooding that could effect as many as 30 million people. Since Yangtze River is China's golden waterway, it must be guaranteed that the passage of ships is unimpeded. Therefore the Three Gorge Dam was constructed with a two-way five-level lock. A lift was also included in the original plan, but it has not been completed yet. The security of the lift is worse than that of lock. The lock with two gates restrains 22.1 billions cubic meters of water. If terrorists destroy the two gates, a catastrophic flood would ensue.

One suggestion to counter the threat posed by hijacked ships that could ram the lock, is to place gun boats upstream of the dam. The boats would presumably be able to identify and destroy any threatening ships.

Where is the Three Gorges Project Going?

There appears to be no way around the flood threat posed by the Three Gorges Dam. Mr. Lu Qinkai claimed that to save the Three Gorges Project, the water level of the Three Gorges Reservoir must be lowered, and planners should realize that it is not possible to have the dam produce large amounts of electricity and protect the surrounding area from floods. He reminds these people in charge that it will be the common people who pay with their lives should a disaster occur.

Aside from the potential flood dangers, the dam project has other negative ramifications. It stands to wreck havoc upon the transportation system that operates on the Yangtze. The common people have always used the river as a means of transportation, via boat, for themselves and whatever goods they may need to transport. Also, there is a high volume of commercial shipping on the river. When Vice Prime Minister Zeng Peiyan went to the ribbon-cutting ceremony, it took his boat less than three hours to pass the ship lock, which he felt wasn't bad at all. For the common people, however, it actually takes seven hours to pass the lock.
In ancient China, it took only a day to travel from Fengjie City to Jiangling City by wooden boat. Today, it takes a modern steam liner over seven hours just to pass the lock, and well over a day to reach Jiangling.

Some cargo ships have to go through a complicated cargo transfer process as they pass through the dam locks, causing further delays.

Then there is the problem of the ever worsening water quality in the Yangtze. It is becoming increasingly polluted. According to Professor Zhang Guangdou, an expert on water resources and hydroelectric engineering from Tsinghua University, it would cost 300 billion yuan (US$37.39 billion) to clean-up the Yangtze. In the face of such a necessary and costly clean-up effort, does it make sense to spend 200 billion yuan ($24.93 billion) on the Three Gorges Dam?

Moreover, financial experts say the dam project has plunged the Chinese economy into debt—by about 500 billion yuan ($62.32 billion). The water from the Three Gorges Reservoir has become nearly undrinkable, and the tens of millions of people who depend on it are being forced to look for new water sources. What a loss!

The dam project has also negatively impacted the lives of the common Chinese living in the vicinity. Except for a handful of people who have managed to benefit from the project, the majority has lost their land and been forced to migrate in search of work. One estimate is that a million Chinese citizens have been disenfranchised as a result of the dam's construction. The project has also resulted in the loss of some 200,000 local jobs.

Some say that reservoir construction is responsible for causing as much as half of China's poorest population. These giant building projects forcibly displace the people in the surrounding areas, turning them into jobless migrants. What's worse is that these people have no way to protest the unfair treatment that they suffer. They are not allowed to complain to the government in Beijing, Wuhan Province or even Chongqing City. If they mention any unfavorable information to overseas media, they would be charged with “divulging national secrets.”

The Chinese Academy of Social Sciences (CASS) conducted a study of the dam titled “Human Rights Research on Three Gorges Re-settlers,” but the study has not been completed despite its 2005 deadline. From the partial content disclosed in this report, it claims that the construction of the Three Gorges Project itself is a human right and as long as the migrants have food to eat, their basic human rights have not been violated.

The CCP refuses to take responsibility for any of the problems caused by the dam project. It makes token attempts at fixing some small problems, but denies the larger issues.

There have been many planning and design errors in the building process. Landslides and collapsing cliffs have been a constant problem during construction. But, the officials have covered up the extent of the problem by lying about the number of incidents. According to the Three Gorges Project Proof Report, there were 150 landslides and cliff collapses caused by the Three Gorges Project. In fact, there were more than 1500. These types of planning errors cost the Chinese people billions of yuan.

In my opinion, there is no way to fix or salvage the Three Gorges Dam Project—it is simply a losing proposition. The CCP made a similar mistake when it decided to build the Sanmen Gorge Dam on the Yellow River.

The main mistake of the Sanmen Gorge Dam had to do with not knowing how much sediment would collect in the reservoir. The problems with the Three Gorges Dam stem from somehow not realizing that water flows from high to low. Don't both of these mistakes defy common sense?

The Chinese Communist Party claims that the Three Gorges Project is the result of good science and democratic decision making—citing the approval of 412 appointed experts. The truth is that it is not scientifically sound and was never subject to any process worthy of the name “democratic.” The Three Gorges Dam Project is another huge mistake on the part of the CCP, and is yet one more hopeless product of a hapless totalitarian regime.

中文 Click here to read the original article in Chinese

Share article:  

Copyright 2000 - 2007 The Epoch USA Inc.