

THE THREE GORGES DAM: GRAND SOLUTION
OR ARROGANT ENDEAVOR?

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For nearly a century, the idea of conquering the third-longest river in the world has held great appeal for the leaders of China. Recently, this vision has become a reality with the Three Gorges Dam, currently the world's largest dam, and possibly its most controversial. The purposes of the dam, which has been built in Hubei province about halfway along the massive Yangtze River, are said to be the generation of clean, hydroelectric energy and the control of hazardous flooding. Additionally, the dam may serve to increase trade and navigation, as well as alleviate problems of water shortage. On the other hand, the structure brings a high risk of pollution and silt accumulation, which will in turn have a negative impact on the complex ecosystem of the river. The flooding of a major part of the Three Gorges region will, furthermore, cause China to lose a valuable part of its history, not to mention necessitating a large-scale relocation of more than 1.3 million residents. However, the Chinese government, powerfully influenced by the ideals of past leader Mao Zedong, has largely ignored the major risks and negative effects of the project, instead painting an idyllic picture, calling the dam a triumph of man over nature and a symbol of the immense power of the country. Remnants

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from the era of Mao and his People's Republic of China, along with the current government's aspiration to create an image of China as an advanced and confident leading nation of the world, have led the Chinese government to forge ahead in the building of the colossal Three Gorges Dam, despite the project's negative consequences, which may prove it ultimately detrimental to the country and its people.

The nearly 4,000-mile-long Yangtze River, which runs through the center of China all the way from the Tibetan Plateau to the East China Sea, has been a powerful force in the lives of the Chinese people for thousands of years and has been used as a source of water, for irrigation and sanitation, and for transportation. Dams have served to allow people to better control their natural surroundings. Sun Yat-sen, the foremost leader of the Chinese Nationalist Party from 1919 to 1925, became the first to propose the construction of a dam in the Three Gorges region of the Yangtze River in 1919.¹ The main function he envisioned for the dam at that time was flood control. Today, this purpose has expanded to include generation of clean energy and increase of navigation. The dam became a possibility when, in 1932, preliminary plans were drawn up under the authority of Chiang Kai-shek, Sun Yat-sen's successor.² In 1944, John Lucian Savage, the designer of two American projects, the Hoover and Grand Coulee Dams, visited China and selected a prime location for the envisioned dam, the very same site where the Three Gorges Dam would later be constructed.³ However, it was not until the era of Mao Zedong and the People's Republic of China that any large dams became realities. After the Chinese Communist Party defeated the Kuomintang and seized power in 1949, Mao "sought to reengineer Chinese society by remolding human nature [and] the nonhuman world, with severe consequences both for human beings and for the natural environment."⁴ Mao promoted the view that human beings are dominant over nature and that nature is a separate entity that must be harnessed and controlled. In fact, according to Judith Shapiro, an expert on global environmental politics and policy, "The effort to unleash popular energy in a war against nature is one of the distinctive characteristics of Maoism."⁵

Mao, determined to prove his power over nature, even swam in the dangerous Yangtze River in 1956.⁶ Shapiro later concludes in her analysis, “Maoism constructed a world that pitted humans against nature, and inculcated this world view among the people through repression, indoctrination, Utopian promises, and censorship.”⁷ This attitude of human superiority over nature and the necessity to silence dissenters has endured and evolved over time, contributing to the forces responsible for the recklessly ambitious building of the Three Gorges Dam. Outspoken Chinese environmentalist Dai Qing warns, “By denying the...good judgment of the Chinese people, whether professor or peasant, the Chinese government dooms the entire country to pay the price. By denying the public the right to debate the wisdom of the dam, they doom themselves.”⁸ Not only have Mao’s beliefs influenced the desire to conquer nature, the Chinese government additionally has sought to demonstrate its power to the watching world. The ambitious Three Gorges Dam has become a recent yet risky avenue by which the government sees itself attaining this goal of wider recognition.

Mao was always strongly in favor of building a large dam and relished claiming the power to tame the Yangtze, a theme that has deep roots in Chinese history. During his movement known as the Great Leap Forward, from 1958 to 1961, more than 110 dams were planned for construction in Henan province alone; by 1966 nearly half of these had already collapsed. This includes the most catastrophic dam disaster in history: the 1975 breaking of the hastily built Banqiao and Shimantan dams, resulting in the deaths of perhaps as many as 230,000 people.⁹ Despite this horrific incident, Mao’s influence led to the construction of more than 80,000 dams since 1949, nearly 3,000 of which had collapsed by 1980.¹⁰ The failure of his Leap, which resulted in a three-year famine killing approximately 30 million people, led to some vocal dissent and distrust of Mao among his people, where before there had mainly been just admiration. Mao’s third, most legendary, swim in the Yangtze in 1966, at the age of 73, helped him to find more confidence, prove his power, and gain back the trust of his people after some of his earlier mistakes.¹¹ He was idolized after the swim, and when he promoted a dam on the Yangtze as a symbol of his

and China's supremacy, he eliminated for a while the doubts and concerns that many people were harboring. In honor of Mao, officials decided that a smaller dam, the Gezhouba Dam, would be built in a different location than the one chosen by Savage, near Yichang in Hubei province.¹² This dam was a preliminary step towards the larger project of the Three Gorges Dam, but construction of the Gezhouba Dam experienced many problems and was even halted for a two-year period. After 19 challenging years, the Gezhouba Dam was finally completed in 1989 and continues to produce energy, although hundreds of miles of power lines run from the dam to Shanghai that to this day have not carried any electricity due to poor planning and flawed construction. These themes would re-emerge with the undertaking of the Three Gorges project, again reflecting Mao's "bigger is better" ideology.

In the same year the Gezhouba Dam was completed, despite the already significant history of dam disasters, the Yangtze Valley Planning Office proposed a new venture that would eventually become the huge Three Gorges Dam. The project was spearheaded by powerful advocate Li Peng, a Soviet-trained engineer, the fourth Premier of the People's Republic of China, and a major proponent of Maoist ideals. Richard Louis Edmonds, a geographer and expert on China, reports that in April 1992, the Chinese National People's Congress passed the Sanxia Key Water Control Project by a vote of 1767 to 177, with 664 abstentions, officially approving the plans for the Three Gorges Dam.¹³ While these figures give the appearance of a well-supported project, they actually reveal record-breaking opposition. The Congress had never seen such a large number of abstentions, because, as Edmonds notes, the usual role of the National's People Congress is to approve anything that is put before it.¹⁴ That nearly one-third of the delegates voted against the project or abstained from the vote shows that, from the very beginning, a large number of people regarded the construction of this massive dam on the Yangtze as an unjustifiable risk. Never before had such opposition been shown in the Congress. Indeed, as Chinese leaders gathered to commemorate the completion of the first part of the dam in 1997, they echoed Mao-era themes, reiterating the goal of conquering nature. But

beneath their words rang the ominous chords of coming problems similar to those that had occurred during the Great Leap Forward due to rapid expansion and a desire to catch up with other developed nations.

Construction of the Three Gorges Dam began officially in 1994, and was finally completed in 2012, after several delays resulting from the scale of the project. The chosen site along the Yangtze is about 28 kilometers upriver from the city of Yichang, near Sandouping, almost in the exact center of the country. The entire project consists of the dam, a reservoir, and a series of locks. The dam stretches 1.45 miles across the Yangtze, five times wider than Hoover Dam. At 607 feet tall, it is about the height of a 60-story skyscraper. The water level of the 360-mile reservoir the dam creates rises to 574 feet, almost three times the depth of Lake Erie, bringing the total water volume capacity to 11 trillion gallons.¹⁵ Clearly, this was a colossal endeavor, one that required nearly 250,000 people working in shifts on a 24-hour schedule to reach completion.¹⁶ Most of the laborers were soldiers, but it was rumored that some were unskilled prisoners working for no salary.¹⁷ As could be expected with any large-scale venture, the construction process met with various difficulties that delayed the project. The dam's original planned completion date was in 2009, but it was not actually finished until early July of 2012. The delays were mainly due to problems with the quality of construction and cracks in the dam. While there had only been one large crack discovered by 2004, which was repaired, there were at least 80 smaller cracks detected by that time that could potentially expand and cause leaks.¹⁸ While cracking is not unusual with structures of such a massive scale, on this project any imperfection could possibly lead to a disaster, especially considering the history of dam collapses in China. In 1973 alone, 554 dams collapsed, resulting in thousands of deaths.¹⁹ While technology has improved the overall caliber of building since Mao's era, construction quality has still come under question on the Three Gorges Dam. A hastily-built structure, erected by inexperienced workers, could easily cause catastrophe in the future.

Additionally, the Three Gorges Project experienced difficulties with its budget and with corruption. At the onset of the project, many foreign companies, including the American company Merrill Lynch and other well-known corporations, were eager to invest and to be involved in order to gain rich financial benefits from the Chinese government. This changed once a number of potential issues surfaced and experts began to question the practicality of such a large-scale dam. The loss of international funding did nothing to hinder the Chinese, who would not allow anything to stand in their way. They simply changed tactics and decided to raise money domestically, through the implementation of a 2 percent sales tax on all electricity consumed within the country.²⁰ Adding to the fiscal complications of the project was the fact that costs ended up exceeding early estimates because corrupt officials stole money from the project. One hundred and five officials associated with the project were arrested in January of 2000 on charges of extortion.²¹ In 2001, the Chinese government had projected that the total cost of constructing the dam would come to around \$21.7 billion U.S. At completion, the official cost of the project had risen to approximately \$28 billion, making it one of the most expensive structures ever built. This official figure reported by the Chinese government, however, is rumored to be too low, according to estimates made by foreign experts. In addition, the total of \$28 billion simply includes the cost of construction and materials. This figure does not include the associated costs of the project, such as population relocation costs and costs relating to environmental damage, which will drive the total up more in the future, perhaps even doubling it. It is difficult to say when, or if, the price of the dam will be repaid by the production of energy and income from tourism.

One principal reason the dam was constructed, apart from the implicit goal of national pride and prestige, was to supply China with clean energy. The Three Gorges Dam is equipped with 26 enormous electric turbines, each with a capacity to produce 700 megawatts. These turbines can generate 84.7 billion kilowatt-hours of electricity in one year.²² According to Henry Petroski, an expert engineer and professor at Duke University, this amount of

energy is roughly equivalent to the amount produced by 15 of the largest coal-burning plants in the world.²³ Given that the burning of fossil fuels is a major contributor to the significant problem of pollution in China, the Three Gorges Dam can reduce China's annual consumption of coal by 40–50 million tons, helping to decrease its emissions of harmful greenhouse gases.²⁴ In addition, the dam not only supplies electricity to the cities but to the rural and farming areas of China as well. Some of these regions have never before received electric power, so the dam can be a great benefit to people living in these locations.²⁵ However, early promises that energy from the dam could be sent to Shanghai can no longer be fulfilled because Central China alone needs more power than the dam's capacity can generate. This fact also means that rural areas will still be ignored as all energy is funneled into the major cities.²⁶ In 2004, the amount of energy generated by the dam was enough to supply China with 10 percent of its energy needs. However, today that number has decreased to only 3 percent as China continues to grow in population and in industrial capacity—an expansion with no signs of easing.²⁷ Therefore, in the future, the Three Gorges Dam will be able to supply an even lower percent of China's energy needs. Although the pursuit of clean energy generation shows the government's awareness of China's significant pollution as well as its intention of actually addressing the problem, one monstrous dam reminiscent of Mao's era cannot be the only solution implemented. The Three Gorges Dam simply cannot supply enough energy to the rapidly expanding population; its energy contribution will become less and less significant as the years pass.

The Three Gorges Dam has helped to tame the Yangtze River and improve navigation, which in turn has boosted trade throughout China. Before the completion of the dam, few ships could travel all the way upriver from the East China Sea to the large city of Chongqing, even though the Yangtze is used by almost 80 percent of Chinese cargo vessels.²⁸ Navigation was dangerous at times due to the rapids of the Three Gorges, and water levels were often too low for most large ships. Today, the dam creates a wider and deeper reservoir to improve navigation through the

Gorges. Coupled with the addition of a vast system of locks on the Yangtze as part of the overall design, the dam allows a greater number of larger and heavier vessels to journey the nearly 1,300 miles from the coastal city of Shanghai to Chongqing, encouraging domestic and international trade and establishing Chongqing as a major Chinese port. The easier navigation will serve to reduce freight costs by as much as 35 percent on this section of the river.²⁹ However, this potential benefit may be short-lived due to an inevitable build-up of sediment that will significantly affect the nature of the river.

Silt accumulation in the portion of the Yangtze behind the Three Gorges Dam is unavoidable and may eventually cause the river to become unnavigable. Five hundred thirty million tons of sand, stones, and even boulders are washed through the Gorges every year.³⁰ Because the reservoir will generally be stagnant, it is highly likely that a generous portion of this material will be trapped by the dam's retaining wall. This sediment will eventually clog the turbines, preventing the proper function of the dam. In addition, the lack of sediment downstream will affect the river and even Shanghai. Without the silt, the Yangtze will flow more quickly below the dam, cutting at the banks more severely and changing the nature of the river.³¹ This might end up reducing navigation and increasing the risk of flooding by destabilizing the banks of the river. The reduction in the flow of silt caused by the dam will even be detrimental to the coastal city of Shanghai, a main port built on a bed of sediment. Silt from the Yangtze helps to not only expand the plain upon which the city sits, but also to strengthen the existing bed.³² With significantly less sediment arriving with the waters of the Yangtze, Shanghai could be in danger of sinking; portions could even become totally submerged under the East China Sea if a natural disaster were to occur and the silt plain was too weak to sustain additional pressure. While the deterioration of the riverbed as well as Shanghai's bed of sediment is a very slow process, it is a consequence not to be ignored, for if the problem is not addressed, significant disaster could occur. More immediately tangible, a faster-flowing river due to lack of sediment certainly inhibits safe navigation of the Yangtze, counteracting the action

of the lock system and greatly decreasing the dam's positive influence on trade and navigation.

The Chinese government maintains that the dam will assist in improving the economy of the Three Gorges region through an increase in tourism, although this disregards the fact that the dam's construction destroyed the previous surrounding economy that was built on farming. The area has always held a majestic beauty, one which has inspired many writings and other works of art, including some poems by Mao himself. However, it was a difficult location to access until the construction of the dam and the reservoir. The reservoir is the largest man-made body of water in the world. While it comes at the cost of destroying some of the wild, natural beauty of the Three Gorges because it submerges portions of the scenic mountains, tourism agencies argue that the new lake and changed ecosystem will draw even more sightseers. At the same time, the increased depth and width of the river allows for access to new destinations by heavier and larger cruise ships that can more easily navigate the river. Tourists can admire the remaining serenity of the gorges, as well as the new triumphant power of the dam. As noted by W. G. Arlt and G. Feng, experts on the business of tourism, "The aim is to promote tourism as the backbone industry in the region and provide alternative employment for immigrants who were moved because of the building of the Three Gorges Dam."³³ With the great loss of farmland caused by the building of the dam, the previous economic activity of the region has been eliminated and new enterprises are necessary. Tourism can provide an economic benefit to the area while offering newly unemployed farmers better job opportunities. The industry is predicted to continue to flourish, since it is expected that the number of tourists will reach more than 30 million per year.³⁴ Still, this new industry would not have been necessary if not for the dam, and many farmers are either not qualified for or are not interested in new jobs with tourism agencies.

When the project was first proposed by Sun Yat-sen, the main reason for the dam was to control flooding, but the degree of protection that will arise from the reservoir has recently come

under speculation. Flooding of the Yangtze River has always been a problem in China. The most recent major floods occurred in 1998, but those that happened in 1954 were much more disastrous, killing around 30,000 people.³⁵ The dam can mitigate flooding by controlling the flow of water out of the reservoir, thereby reducing the overall volume of water below the city of Yichang.³⁶ The government-controlled website for the China Three Gorges Corporation discusses the effectiveness of the dam in controlling floods, stating that the dam will protect 1.5 million hectares of farmland and towns, along with 15 million people.³⁷ Additionally, the dam can be successful in preventing epidemics of certain diseases such as schistosomiasis, a chronic illness that can damage organs and is contracted through interaction with water-dwelling, parasitic snails that can be found in the Yangtze River. During floods, these snails infiltrate anywhere and everywhere, including homes and the drinking water supply. With fewer floods, there is a much lower chance of human exposure to these snails. Officials also state that the dam could potentially save up to \$117 million in flood damage each year.³⁸ However, other experts, including the U.S. Army Corps of Engineers, argue that the dam can only be effective in preventing floods in the upper reaches of the Yangtze River, contrary to reports by the Chinese government.³⁹ If a flood were to occur in the middle reaches, the dam could only potentially reduce the scope of the disaster, but could in no way prevent one from happening, since many tributaries flow into the Yangtze below the dam. The dam can have little effect on sections of the river past the location of the reservoir and lock system.⁴⁰ The Three Gorges Dam will nevertheless have some kind of impact on flooding, realizing the persistent dream of controlling the Yangtze despite the fact that the river will always be powerful and unpredictable. Floods will never be eliminated fully, but any reduction in flooding can save a significant number of lives, although a crucial argument is whether or not this point mitigates the other risks of the dam and the arguably drastic changes in the lives of the more than 1.3 million people displaced by the project.

While the Three Gorges Dam may be able to reduce drought in the region, it brings with it a high risk of water pol-

lution. The massive reservoir created by the dam supplies water to various cities, including Shanghai, which often experiences water shortages, and was additionally thought to offer a solution for droughts in the Three Gorges region. However, some experts have recently become concerned that droughts in the area this year have actually been caused by the dam, because it alters the natural flow of the river and stores too much water for later times in the year.⁴¹ In addition to irrigation, the Yangtze also serves as the primary source of water for tens of millions of people, despite the fact that billions of tons of waste are dumped into it each year. Chongqing alone pours almost 1 billion tons of waste water into the river annually. Only 20 percent of this sewage is treated. Another billion tons of waste per year are discharged by more than 3,000 factories and quarries along the river.⁴² On top of all of this, about 8,800 tons of toxic pollutants, including lead and mercury, are also added to the river annually. When the region was flooded by the reservoir, an estimated 3 million tons of garbage were submerged. Disposal would have cost more than \$450 million, which the government did not invest to help create a cleaner reservoir.⁴³ Before the dam, the sediment-rich, slower-flowing river was able to handle the pollution rather well because of natural purification processes. For example, many of these biological processes are performed by microbes and helpful bacteria, which readjust oxygen and nitrogen levels in the river. Purification takes time, and a more quickly flowing river interrupts these processes. The Three Gorges Dam leads to an increased flow rate of the river in this area, diminishing the ability of the river to purify itself and reduce the dangerous contamination. The large amounts of pollution in the river can easily end up leading to severe consequences, especially with disease, since so many people depend on the water from the Yangtze. Once the reservoir was filled, Chongqing alone needed almost 30 water treatment plants to be able to keep the water quality at a satisfactory level.⁴⁴ The Chinese government has been very reluctant to pay the large sums of money required to deal with the pollution, endangering a large number of citizens.

Some recent natural disasters and changes in the stability of the land have also been linked to the construction of the

Three Gorges Dam. The dam not only alters the appearance of the land, it also affects the solidity and strength of the ground. The Three Gorges region has recently experienced multiple landslides, which experts believe are related to the dam's reservoir. According to geologist Fan Xiao, water from the reservoir seeps into the soil at the base of the area's rocky cliffs and destabilizes the land, which makes it prone to landslides. The water level of the reservoir has been raised gradually over the years. At the same time, the frequency of landslides has increased. Twice as many landslides were recorded in 2003 than in 2001. In July 2003, a landslide claimed the lives of 14 people. Since the water level was raised in September 2006, dozens more landslides have occurred, including one that killed more than 30 inhabitants.⁴⁵ Another fear is that the dam may cause severe earthquakes, owing to the fact that the reservoir sits on the Jiuwanxi and the Zigui-Badong, two major fault lines. When the reservoir level is changed throughout the year, the fault lines are strained. This could potentially cause fault activity to intensify and induce earthquakes.⁴⁶ Any major natural disaster, but especially earthquakes, could cause damage to the dam itself. A strong enough tremor might even result in the bursting of the structure, causing 10,800,000 cubic feet of water to cascade downward through the area every second.⁴⁷ The scope of damage that this would create is almost impossible to fathom, but it is continually ignored by the Chinese to preserve their image, as they remain convinced of the greatness of their accomplishment. In fact, the China Three Gorges Corporation website claims, "The geologic structure [of the dam and reservoir] is stable, and has no geological background for a future heavy earthquake."⁴⁸ The authorities prefer to discount the chance of a disaster, although landslide and earthquake activity has already increased since the reservoir has been filled.⁴⁹

The Three Gorges Dam is thought to have played a role in recent variations of climate and agriculture in China. The dam has caused extensive soil erosion, deforestation, and deterioration of water quality.⁵⁰ The silt build-up behind the dam also deprives agricultural land downriver of natural replenishment of nutrients. Not to mention that nearly 74,000 acres of very fertile farmland

have been submerged. All of these factors have negatively impacted Chinese agriculture. Additionally, the large volume of water from the new reservoir is expected to lower the average temperature by .9 to 1.8 degrees in the summer, and raise it by 1.4 to 2.3 degrees in the winter.⁵¹ These changes, although they may seem small, are another potential threat to agriculture, especially to tangerines, which are the region's main cash crop and can only grow under very specific circumstances. It is possible that the clean energy generated by the dam will reduce emissions of carbon dioxide and sulfur dioxide, the main contributors to China's terrible air quality and to climate changes, by nearly 20 percent.⁵² However, this reduction has yet to be seen after nearly seven years of operation. Much more importantly, the great loss of farmland leaves people out of jobs and with less food, especially as the population continues to increase. The unemployment rate in the Three Gorges region is nearly 12 percent, as residents struggle to find work and earn a living in the more and more sparsely populated area, due to relocation and poverty.⁵³

The construction of the Three Gorges Dam has disrupted the ecosystem of the Yangtze River and the East China Sea. The dam also threatens multiple species with extinction. Forty-seven plants, 36 of which are only found in the Three Gorges, are classified as rare and face extinction because of the dam. Many are used in traditional Chinese medicines, including lotus-leaved-brake which is used to treat kidney disease and is found nowhere else in the world.⁵⁴ The dam could also bode badly for the critically endangered Baiji dolphin, which lives only in the lower Yangtze River, because the reservoir will alter the animals' ecosystem by slowing the river.⁵⁵ More importantly, the dam will have a negative impact on the fishing industry. Experts at the National Taiwan Ocean University have monitored the ecosystem of the East China Sea since the reservoir was filled. Only two months after this occurred, the number of phytoplankton, the base of the food chain, declined significantly. The lack of sediment also spurred a shift in the dominant species of phytoplankton to a type of flagellate, which is less nutritious and can actually kill fish by depleting the oxygen levels in the water.⁵⁶ A reduction in the amount of fresh

water flowing out of the Yangtze caused the high-productivity zone of phytoplankton to decrease by almost 86 percent. This huge loss spurs a huge reduction in fish populations.⁵⁷ China has the best fishing industry of all countries, producing about one-third of the world's fish. Annual catches could be reduced by as much as 1 million tons, leaving the fishing industry of China in jeopardy and significantly affecting the supply and price of certain species of fish in the world market.⁵⁸

Another unfortunate consequence of the Three Gorges Dam is the loss of significant Chinese history due to the flooding of the area. The Chinese government only allotted enough money to protect about 15 percent of the important historical sites that could have been lost, resulting in nearly 8,000 archeological sites being submerged when the reservoir was filled. These included many from the first Stone Age that ended 10,000 years ago, as well as the last homelands of the Ba, a Bronze-Age society that settled in the Yangtze River Basin about 4,000 years ago.⁵⁹ In total, about 1,300 important archeological sites were destroyed, including tombs of emperors, pagodas, and other ancient burial sites.⁶⁰ Of course, these were only the ones that were known. The flooding also prevents the discovery of any other new sites in this region in the future. History and ancestry used to be of vital importance to the Chinese. The disregard shown by the Chinese government is yet another example of the consequences of the rapid modernization occurring throughout the country, a change for which the Three Gorges Dam has been portrayed as an important symbol. It also shows the continued influence of Mao, who wanted to eliminate ties to China's imperial history and who was obsessed with industrialization. He advocated an essential erasure of China's history during his Cultural Revolution, removing traditional and cultural elements from society and imposing his own communist beliefs. His principles still reverberate throughout China today and drive the country in its goal of modernization.⁶¹

By far the most controversial issue of the Three Gorges Dam is the large-scale relocation that was required due to the flooding. Two hundred forty square miles of land were inundated

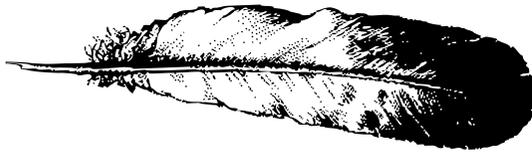
under 300 feet of water, submerging at least 13 cities, 140 towns, 1,350 villages, 657 factories, and about 74,000 acres of cultivated land.⁶² In total, nearly 1.3 million residents had to be moved out of the area. Roughly 1,600 industrial enterprises had to be relocated, resulting in the displacement of 484,700 urban residents.⁶³ According to the resettlement plan drawn up by the government, these people were relocated to various cities and towns where they could continue with their previous occupations. Unfortunately, resettlement of rural inhabitants was much more difficult, because there was not nearly enough excess farmland available for everyone to be given the same amount of land that they had possessed prior to displacement. Therefore, three strategies had to be used to relocate rural residents: settling people on nearby, less fertile farmland, sending people to urban areas to live with relatives, and moving people to distant provinces. However, people who moved to urban areas often found that they could not hold a job because they were not accustomed to the type of work offered in cities.⁶⁴ Moving a long way from their old homes was also not a very appealing option for most residents. Not only had most families lived in the same location for generations, but it is also difficult for people to reestablish themselves economically and socially in unfamiliar places.

Prior to relocation, three experts on resettlement in China—Li Heming, Paul Waley, and Phil Rees—took an in-depth survey of the people who would be affected by the Three Gorges Dam because of the resultant flooding. Results of the survey revealed that a majority of the respondents were looking forward to gaining benefits and had hopes of improving their living conditions. They believed that the Chinese government would take responsibility for reinstating their livelihood after displacement. Unfortunately, this has not usually been the case. According to the survey, only 8 percent of migrants feel that their standard of living improved after relocation. On the other hand, 66 percent of rural residents report that the farmland they received after relocation was smaller or of worse quality than land they had possessed originally. There have also been reports of households in the same location that have been treated differently by the government, with no explana-

tion for the inequitable actions.⁶⁵ One woman, kept anonymous for fear of being arrested, saw her son sent to a different province and lost her family business with no compensation. She lamented, “Our fine family has been bankrupted and split apart.”⁶⁶ Already too many people have faced similar circumstances but as of 2012, nearly 100,000 more residents may have to be moved due to an unexpected increase in the shifting of the land surrounding the reservoir. More people are now at risk from landslides than the government originally predicted. Overall, the Chinese government has not done a thorough job in organizing the relocation efforts, leaving many people highly unsatisfied with the changes that will affect them for the rest of their lives. Even today, many people have found that the government has not followed through on its promises made prior to the flooding of the region, leaving many without any help or compensation.

The Three Gorges Dam was initially planned for the practical purposes of energy generation, flood control, and improved navigation, but it was also built for global recognition and legitimacy. During Mao’s Cultural Revolution, projects on the largest scale were viewed as the best. This particular colossal endeavor was meant to prove the might of China and to help establish it as a dominant world power. Intellectuals opposed to the dam who spoke out against it were even sometimes persecuted and jailed, such as famous Chinese environmentalist Dai Qing, who spent nearly 10 months in jail for criticizing the dam. Her compiled book, *Yangtze! Yangtze!*, was banned in China soon after it was published, continuing to repress opponents’ opinions and to disguise the major issues of China’s drastic undertaking.⁶⁷ The huge scale of the dam is one reason that it has been troublesome; a better solution for creating clean energy might have been to build a series of smaller dams along the tributaries of the Yangtze River. These would have had a less significant effect on the ecosystem and on the people of China. Of course, smaller dams, while more practical, were not nearly extravagant enough to satisfy Mao’s, and subsequent Chinese leaders’, need for worldwide attention and industrial prowess. Dai Qing writes in her book, “There is only one Yangtze River and we have already subjected it to many stupid

deeds. Such stupidity should not be repeated. The Yangtze River belongs to all Chinese people and to the entire world."⁶⁸ Yet this statement is a fact long forgotten by the Chinese: no matter how grand the dam, the wild river itself will always belong to nature. Conquering nature will never cease to be a futile undertaking; now, with the completion of the dam, nature has already begun to reveal this truth with increasing numbers of landslides and other natural phenomena. China took a risk in tackling the massive Three Gorges Project, and now they will have to deal with the consequences for years to come, however severe they may be in the end. Of course, modernization is not all bad; in fact, it is inevitable in today's global society. Still, while the Three Gorges Dam has certainly helped China to increase its reputation, it is one that is more infamous than respectable. Perhaps the dam truly symbolizes China's arrogance, as it continues to modernize and grow, with little regard for practicality, as a leading world country.



Notes

¹ Deirdre Chetham, Before the Deluge: The Vanishing World of the Yangtze's Three Gorges (New York: Palgrave Macmillan, 2002) p. xx

² *Ibid.*, p. xx

³ Henry Petroski, "Three Gorges Dam" in Pushing the Limits: New Adventures in Engineering (Westminster: Alfred A. Knopf, 2004) p. 208

⁴ Judith Shapiro, Mao's War against Nature: Politics and the Environment in Revolutionary China ed. Donald Worster and Alfred W. Crosby (New York: Cambridge University Press, 2001) p. 2

⁵ *Ibid.*, p. 48

⁶ Simon Winchester, The River at the Center of the World: A Journey up the Yangtze, and Back in Chinese Time (New York: Henry Holt and Company, 1996) p. 192

⁷ Shapiro, p. 196

⁸ Dai Qing, Yangtze! Yangtze! (Toronto: Earthscan Canada, 1994)

⁹ Shapiro, p. 63

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Copyright 2014, The Concord Review, Inc., all rights reserved. The three gorges dam: grand solution or arrogant endeavor? Rebecca Grace Cartellone. For nearly a century, the idea of conquering the third-. longest river in the world has held great appeal for the leaders of China. Recently, this vision has become a reality with the Three Gorges Dam, currently the world's largest dam, and possibly its most controversial. The purposes of the dam, which has been built in Hubei province about halfway along the massive Yangtze River, are said to be the generation of clean, hydroelectric energy and th The Three Gorges Dam is a hydroelectric gravity dam that spans the Yangtze River by the town of Sandouping, in Yiling District, Yichang, Hubei province, central China, downstream of the Three Gorges. The Three Gorges Dam has been the world's largest power station in terms of installed capacity (22,500 MW) since 2012. In 2018, the dam generated 101.6 terawatt-hours (TWh), breaking its previous record, but was still slightly lower than the Itaipu Dam, which had set the world record in 2016 after Though the Three Gorges Dam tends to attract more negative attention, there have been some noticeable positive benefits of using the dam. The Three Gorges Dam was engineered to serve three main purposes flood control, hydroelectric power production and navigation improvement, which some believe, is also a great advantage of having the dam. Power Hungry. To generate all the energy, the hydro project needs tremendous infrastructure. The Three Gorges Dam provides energy to millions of people using 34 massive generators. In short, that would be like a power plant burning through, 25 million tons o China finally admits Its Three Gorges Dam has "deformed slightly" but claims it happened over the weekend, ignoring reports this happened long ago. The Asian Times reported yesterday: Advertisement - story continues below. In a rare revelation, Beijing has admitted that its 2.4-kilometer Three Gorges Dam spanning the Yangtze River in Hubei province "deformed slightly" after record flooding. Despite protests by residents and environmentalists, the Three Gorges Dam was completed in 2006 after a 12-year build. Millions were displaced as an area of about 600 kilometers was submerged to create the world's largest dam and hydroelectricity facilities. Advertisement - story continues below.