

Fall 2005

Drowning Shangrila: Balancing Environmental Protection With Development in China

Tessa A. Vennell
SIT Study Abroad

Follow this and additional works at: https://digitalcollections.sit.edu/isp_collection

 Part of the [Natural Resources and Conservation Commons](#)

Recommended Citation

Vennell, Tessa A., "Drowning Shangrila: Balancing Environmental Protection With Development in China" (2005). *Independent Study Project (ISP) Collection*. 417.
https://digitalcollections.sit.edu/isp_collection/417

This Unpublished Paper is brought to you for free and open access by the SIT Study Abroad at SIT Digital Collections. It has been accepted for inclusion in Independent Study Project (ISP) Collection by an authorized administrator of SIT Digital Collections. For more information, please contact digitalcollections@sit.edu.

**Drowning Shangrila:
Balancing Environmental Protection
With Development in China**

“My guest-house doesn’t matter. How about all of the history and culture?
Change an area, you never get it back.”
-Sean Xia, owner of Sean’s Guest-House

As I hurry to gather my bags, pay the bill that has accumulated over the last two days at Sean’s guest house and get into the “meinbaoqi” *bread bus* before the teenage driver leaves without me, I take another look at the gorge that I spent the last few days exploring. This time, I have a different feeling leaving the gorge than when I hiked it during the National Holiday. Part of me is happy to move onto the next stage of my research; I am encouraged by the community responses I was able to gather about the set of eight dams that the Chinese government is planning for the Jinsha River *Upper Yangtze*. Part of me knows that the governments in Zhongdian and Lijiang Prefectures will not be as helpful as the people in the gorge who will potentially be displaced by the reservoir created by these dams. Part of me feels as if I am turning my back on a place that has grown to mean so much to me during these few short months in China. Leaving this time, I do not know if I will ever see “Hutiaoxia” *Tiger Leaping Gorge* again.

Ecological Background

Tectonic movement in the earth’s crust formed Hutiaoxia. Two major plates of crust collided to create some of the highest mountains and deepest gorges in the world. Each year, they are getting higher and deeper. The high altitude of the mountains combined with low latitude creates the unique ecology of Northwest Yunnan. Even if the air is cold the sun still feels strong. This photo-intensity fosters photosynthesis during the growing

seasons, and makes it possible, in many places, for three rotations of crops each year.

In addition to planted crops, biodiversity in Northwest Yunnan is among the highest in the world. The area is registered as one of the 35 most biodiverse places in the world by the international non-governmental organization Conservation International. To qualify as a hotspot, an area must contain at least 1,500 species of plants and at least 70 percent of its original habitat (www.conservation.org). Northwest Yunnan has much to offer in terms of plant and animal life. The high photo-intensity coupled with the historical absence of glaciers give rise to an area rich in ecology. Many plants that were destroyed in other, similar parts of the world by glaciers during the Ice Age continue to grow in Hutiaoxia. The alpine oak forests in the area evolved from remnant plants from before the Oligocene period and others survive from the Cretaceous and Tertiary periods (Ren, 323).

Also growing in the wild around Hutiaoxia are many herbs and plants used in Traditional Chinese Medicine. Feng Defang, owner of the Halfway Guest-House in the gorge, uses herbs he finds in the area to cure everything from high blood pressure to coughs to allergies. He took me on a tour of his gardens and the area surrounding them in terms of the plants he is able to use, and although he couldn't tell me many of the names in English or even Mandarin, he could talk confidently about their uses. Feng said that many of the plants that grow in the gorge do not grow in other places because of the unique combination of wet and dry growing seasons, explaining simply by saying "different place, different earth." On my most recent trip to the gorge I was attacked by a bout of "stomach problems" while I was still staying at the Halfway Guest-House. Feng gave me a teaspoon full of a reddish powder and instructed me to put it into my tea. He said it was very gentle. Unfortunately, it was a little too gentle and my stomach is still rejecting food.

Although some species have survived in Northwest Yunnan, indigenous people have used up a lot of the natural resources in the area. Deforestation is a major problem in this area; the cold weather and lack of other sources of heat have led to wood-burning as a major source of energy. In the 1950s forest coverage in the upper reaches of the Yangtze River was between 30 and 40 percent. In 1998 only 10 percent of that forest remained (Economy, 65). Deforestation and destruction of wetlands caused the Yangtze to flood in 1998, killing more than 3,000 people and flooding 52 million acres (Economy, 67). After the flood, logging was banned, but trees are still cut in many areas. According to *An Outline of China's Physical Geography*, China is third in the world in terms of run-off resources, because of the “undulating terrain, concentrated rainfall and heavy rainstorms, and because of destruction of the natural vegetation cover in the past, surface run-off results in a great deal of erosion” (Ren, 105).

Reforestation is difficult in the area, according to Li Bo, program coordinator for the Chinese non-governmental organization Center for Biodiversity and Indigenous Knowledge (CBIK). Hot, deep valleys and the resulting circulation of airflow keep the soil too dry for many trees to grow well. Because of the dry air and lack of tree roots, erosion is a major problem in many rivers in China, especially the Yangtze. Landslides in the area are also a concern, and a result of the erosion.

Packing eight people into the meinbaoqi from Sean's back to Qiaotou, the driver swerves recklessly around a turn right into the opposite lane and into the path of an oncoming vehicle. I grip my seat and hold my breath as the driver steers us back into the other lane, and into relative safety. The road that we take to Qiaotou was built in 2003 but is already falling apart. The waterfalls that creep down the edges of the gorge run right

over the road, causing shallow pools of prime hydroplaning surface. The road is reduced to one lane in many places where the riverside edge has just crumbled off into the gorge or landslides have left boulders blocking the way. The road through the gorge is an illustration of a conversation I had with a geological engineer at a guest-house two nights before.

When the schist, or rock layers, is at the same angles as the cliffs, any change in that will change everything because there is no supporting structure. What dams and reservoirs will do to the area is only imaginable.

The Hutiaoxia Dams

Although the planning process for major projects happens mostly behind closed doors in China, some information is available to interested readers, if they have access to a computer or a newspaper. The magic number in this case is eight, as in eight dams, with a definite decision from the government regarding logistics by 2008. The reservoirs that will be created by the dams will affect 13 towns along the Yangtze upstream of Daju. Two hundred thousand mu (1 mu = 0.66 acres) of land will be flooded, including Qiaotou, Shigu, Nuoyu and others (Zummo). The number of people who will need to move has been published as 100,000, but many sources speculate that it may be as many as one million.

The main concerns about the validity of the dams have to do with the value of the land that will be lost to the reservoir. In an article in emagazine.com journalist Cathy Shufro raises four major objections to damming Hutiaoxia: seismic activity in the area, loss of biodiversity from flooding, too many displaced people, and the site is historically important in China. The Tea and Horse Trade Route was used in the area long ago to get tea to Tibetans and horses to the rest of China. In July of 2003 UNESCO deemed this area (the Three Parallel Rivers) a World Heritage Site, which means it is worth protecting and

preserving and considered to be “of outstanding value to humanity” (whc.unesco.org).

Although I was initially aiming, through my research, to portray two (maybe more) views of why or why not these dams should be built, the Chinese government, the mighty champion of dam-building, was unreachable. The following information is what I have deduced from online sources as well as from my interviews. One of the purposes of the dams over Hutiaoxia is to block the silt caused by erosion from China’s massive “Sanxia” *Three Gorges Dam*, which is about 1,500 kilometers downstream. As well as blocking siltation, the Hutiaoxia dams will provide clean water to other parts of China. The Chinese Environmental Protection Agency claims that “seventy percent of the water in five of China’s major river systems is unsuitable for human contact,” and 48.5 percent of the water in the Yangtze River is “not suitable for human contact” (Economy, 69).

Water from the Hutiaoxia reservoirs will be diverted specifically to Kunming’s Dianchi Lake. This lake has serious water pollution problems. According to LakeNet, a global network of people and organizations concentrating on the conservation of lake ecosystems, “Blue-green algal blooms, a sign of severe nutrient pollution, reportedly covered 20 sq. kilometers [total surface area is about 309 square kilometers] of the lake surface as recently as 2000, and repeatedly caused production problems at the water plant on the lake. The Waihai Lake section is affected by 0.2 billion tons of waste water runoff, containing 5,000 tons of total nitrogen and 500 tons of total phosphorus” (www.worldlakes.org). Pesticide pollution is also a problem, and contact with the water allegedly causes brain worms (Lu Yuan). The main purpose of the dam is to provide 21 million kilowatts of electricity per hour via a hydroelectric power plant downstream of the gorge in Daju. The electricity will be sold to the cities on China’s east coast that have

severe energy shortages (Zummo).

Energy shortages are the main driving-force of the building of dams all along China's most powerful waterways. China's rivers have great hydraulic potential. Deep gorges and strong rivers with glacier melt providing headwaters coupled with relatively low population density in the area make it prime for hydraulic development. So the potential is there, and, at first glance, it seems as if the need is there as well. Although China's growing energy needs seem legitimate with an exponentially growing economy and more and more of China's 1.2 billion people wanting televisions, Li suspects the need to be inflated by big energy companies in China. He told me today, during a meeting with him at his CBIK office, if China completes all of the projected dam projects in the country, within 50 years the country will have an energy surplus.

China's Environmental Non-Policy

China has taken a similar role in managing the environment as the country has taken in managing the economy. "China's leaders provide administrative and legal guidance but devolve far greater authority to provincial and local officials; they utilize campaigns to implement large-scale initiatives of nationwide importance; they embrace the market as a force for change; and ... they rely increasingly on private citizen initiative and the international community to provide critical financial and intellectual capital" (Economy, 91). Unfortunately, unlike the economy, the environment will not regulate itself.

This stance has developed out of a history of taking advantage of that in nature that can be sold and disregarding the rest. According to Elizabeth Economy in her book *The River Runs Black*, there is no compelling ethos of conservation in China. This comes from the deep Confucian roots that permeate so many parts of society, which promote man's

need to use nature. The philosopher Xunzi during the Warring States period wrote that by appreciating nature's laws, one can overcome nature and use it for one's own benefit (Economy, 32).

During the Cultural Revolution and the Great Leap Forward, Mao Zedong exaggerated Xunzi's view to extreme Confucianism and used this to rationalize the environmental degradation that was taking place. During the 1980s the maxim "First development then environment" was introduced and this continued to be the prevailing ethos until the 1990s. Even now, when the government has, according to David Abrahamson, Communications and Philanthropy Assistant at TNC, great environmental law on paper, there is no culture of environmentalism in China. This may be due to historically different beginnings than in the West, but I think it also has to do with lack of education. In a village near Dali called Shaxi, I asked a "fuwuyuan" *attendant* why there is no recycling in the village. She told me that there was nothing to recycle. Instead, these people either burn their trash or throw it into the river, or burn it and then throw it in the river.

Perhaps the most positive thing the government has done in terms of steps in the right direction is limiting population growth (Although it is unclear whether the benefits outweigh the drawbacks of China's 1979 One Child Policy.) In the 1970s Chinese policy changed from promoting a big population to releasing this slogan: "One child will do, two are good enough and three are one too many" in 1970-73 (Economy, 75). All of China's environmental problems are just compacted by the huge population. With 1.3 billion people and a 0.58 percent growth rate (www.cia.gov), the One Child Policy is appearing to have an effect.

Multilateral agreements have also had some impact on boosting China's environmental policy. The Rio Conference in 1993 promoted sustainable development in developing countries across the world. Here China agreed to sign Agenda 21, which encouraged countries to raise the price of their natural resources to reflect their economic value. Coal was the first resource to be re-valuated, but the full environmental cost of mining and burning was not taken into consideration. Shanghai has made similar reforms in enforcing a 25 to 40 percent price increase in tap water. The extra money goes towards water quality improvement programs and to make sewage self-financing (Economy, 119). China could make a lot of progress by re-valuing water in other cities and electricity in a similar way, to reflect the scarcity and externalities on the environment of using the resource.

The Mountains are High and the Emperor is Far Away

The problem exists in the thousands of kilometers between the environmental law that Abrahamson claims exists on paper in Beijing and the rural farmer in Shaxi whose public toilet empties into the Black Sand River. The problem is enforcement and corruption in the enforcement system. China's national laws are too broad. There is a saying in China, "National laws, local countermeasures," (Economy, 102) which illustrates the common practice of exploiting the vagueness of Beijing laws. Until laws were changed in June of 2003, the fee collection process for failure to meet environmental standards in China was just incentive for local environmental protection bureaus to encourage the persistence of pollution problems, because there was no system of checks on these branches of the government (Economy, 111). Now fees are paid directly to the bank, but if the polluter "is facing severe economic loss" (Economy, 112) then the law still allows exemption from

these fees. There is also something called “soft laws,” laws that state-owned companies do not need to comply to. I do not know if that applies here, but because a term exists for this phenomenon, I assume that it happens.

When I went to Zhongdian to talk to the prefectural government there about the status of the Hutiaoxia dam plans, I ran into a brick wall. I should have seen it coming when Sean told me that China is “a private country, not a public country. If you have no money, you just open your empty mouth. Nothing done.” All I heard from the government was “Go to Beijing,” or “That person is in Kunming now.” The actual building of the dam is suspended until 2008, when the government releases the Environmental Impact Statement (which is, since 2003, required before the commencement of all major construction projects in China), but even so it seems that local governments should have some input. Much of what I have read has said that the decentralization of the government is a major cause of problems, but for huge construction projects like dams, this is not the case. Indeed, according to the World Bank in their “Water Pollution Control Findings,” in China it is “difficult to move from a command and control based approach to a more diversified framework that includes economic, voluntary, and public participation” (www.worldbank.org).

The Role of NGOs

Where the government is not solving China’s environmental problems, it is at least opening the door to non-governmental organizations. Economy writes in her book, “The most potent weapon in China’s environmental protection enforcement effort is the advent of the non-governmental environmental advocate” (115). By 2002, there were 230,000 officially registered NGOs in China (Economy, 132). I spoke with a representative at TNC,

an organization committed to preserving the “plants, animals and communities that represent the biodiversity of life on earth by protecting the lands and waters they need to survive” (nature.org). I also talked to Li Bo at CBIK, a Chinese NGO dedicated to biodiversity conservation and community livelihood development. These organizations are taking very different approaches to the Hutiaoxia dam project.

At a TNC presentation for SIT students earlier this fall, my academic advisor asked the presenter what he thought about the Hutiaoxia dams. He told us that he had a file or a press release from the government about what he should say about that. It was clear that he felt like he could not talk openly.

When I met with David Abrahamson he told me a lot about how TNC is dealing with the dams. TNC is providing a connection between the United States and China, sending Chinese dam experts to the United States to learn how dams are built there. In the United States, according to Abrahamson, most dams harness about 90 percent of the available hydroelectric power. In China, the Sanxia Dam, for instance, only harnesses something like 17 percent (Abrahamson). TNC is also doing research and creating information systems. In general, it seems that TNC sees its role as working with the government to develop more environmentally friendly policies.

TNC has to pick its battles in China. “We have too many opportunities in China to waste. We’ve been here for five or six years and we’re starting to get things done,” Abrahamson said. He differentiated between TNC and Chinese NGOs in saying that “Chinese environmental groups can get on the government’s back. Native groups have more clout.” The people at TNC feel like they are doing a lot of good in China, and can continue to. The problem with that is that these international NGOs have connections to all

over the world, and a lot of experience, and with these tools have the potential to be so helpful in China.

But China's fears are not unfounded. Environmental movements in other countries have turned into pro-democracy movements. Some Eastern Bloc countries went through similar situations, where natural resources were treated as free goods, and the government had to slowly re-valuate natural resources to reflect market prices. According to *The River Runs Black*, in Latvia speaking out about the environment was the only way to express civil disobedience without being arrested. "The linkage between the environment and broader political issues such as nationalism and anti-communism was often made explicit through opposition to large projects such as nuclear power stations, dams, and river diversions" (Economy, 230). These large projects serve as a catalyst, and brought together with a unifying aspiration (which develops out of some underlying social discontent) and a means of communicating, these movements take off. This is what the government is worried about.

CBIK seems to have taken a more active approach. Although CBIK does not have an active oppositional group to deal with the dams, it is clear from just talking to Li Bo about the dams that he knows what he is doing. One of the most encouraging things is that he is really excited to give me all of the information he has, because he knows that it will only generate more information on the subject. Ideally an NGO in a case such as this one would connect people in the gorge like Sean with a wider network of people who may have more connections and clout. Although if this situation were happening in the United States, having a specific group of CBIK members actively searching for local people who have something to say would be the best way to go about the problem, I do not think it works

like that in China. Maybe I am giving the organization too much credit, but Li was one of only two people (Sean being the other) who did not say to me, "These dams will be built."

Sean Xia told me at his guest-house that he thinks the only way to affect change is to get the international community involved. I spent time with him, when I first arrived, translating a letter he had written to the government about his thoughts on the dams into English. The letter was written two years ago, and he still has not heard anything back. I asked him why he wanted the letter in English, and he said that he wanted to be able to put it on the Internet to raise awareness. But Sean does not know what his next step should be. He has the letter; he has it translated; he does not know what to do next. This is a fundamental element missing in Chinese society; people do not know how their government works, or how to work within the government to influence change. If Sean could get his letter to Li at CBIK, then Li can take it from there. This is the role that has to be played by unaffiliated people in China, but it is really dangerous.

The first time that Xiao Liangzhong was mentioned to me I was meeting with Li in the French Café in Kunming. Li told me to look up an article in the South China Morning Post about Xiao Liangzhong because he did a lot of work in Sigu educating people about the dams. I never got around to looking up the article. The second time I heard of this person was at the Gorged Tiger Café, from the owner, an Australian named Margo. She was questioning the legitimacy of journalists and students coming to the gorge to do research and writing the article or paper and then never thinking about it again. She mentioned that we just come to write and move on, while there are people dying for this gorge. The third time, I was talking to Sean, and he told me that during the Spring Festival this year (February 2005) a man who worked in the gorge went to Beijing to talk to the

government and did not come back. Sean told me that the officer said it was an accident, but “the local people think [it was] strange.”

The most recent information I was sent was the *South China Morning Post* article that I was instructed to find. The Director of Operations at TNC, Stefan Kratz, sent it to me as an attachment. It said that anthropologist Xiao Liangzhong was posthumously awarded a “Special Prize” from the Alxa See Ecological Association (a Chinese NGO that works to improve and restore the environment in the Alxa region of Inner Mongolia and to improve environmental protection across China) for his campaigning against the Hutiaoxia dam plans. The article claimed that Xiao Liangzhong died at 32 of exhaustion (*South China Morning Post*, 23 April 2005).

The Role of the Media

Economy writes in her book that the other major element of Chinese environmentalism is the media. The media has been an essential element of activism in China. She writes, “In a 2001 public opinion poll [unheard of in China], almost 79 percent of Chinese indicated that they learned about environmental protection-related issues primarily from television and radio. Government publicity was a distant second” (Economy, 163).

In my meeting with Abrahamson he told me that TNC does not use the media as their main avenue for education, but use it for some things that are less instruction-intensive, like anti-littering ads and other issues that the main problem is lack of awareness. TNC has also written a song about the Golden Monkey, a highly endangered animal living in China, to raise awareness. I have yet to hear this song, but I am sure it is fantastic.

When asked about how one can make environmentalism in general and this issue in particular important to people, Li said that the media was the best way. Individual journalists in China have been most successful in dragging environmentalism closer to the front of some Chinese people's minds. According to Li, "In the last decade individual journalists have been very courageous in bringing these issues out in public."

Among the contacts that Li gave me was a journalist from Beijing. The journalist was happy to send me the information he had regarding the dams. He had recently written an article for an independent magazine in the United Kingdom that he sent along as well. I also heard from Sean that a journalist who was doing some work in the gorge had disappeared two days before I arrived, but I cannot confirm that information with any other sources.

The Hutiaoxia dams are still a relative mystery to the international community. Thomas Friedman of the New York Times did write a piece on November 9, 2005 called "Tiananmen Just One View of China," in which he talks about the growing farmer's movement against the dams (evidence of which I found none). They are apparently "getting vocal, learning about their legal options and pressing local officials to reconsider how the dam will be built" (The New York Times, 9 Nov 2005). When I contacted Friedman to ask where he did his research, he told me he was brought to the gorge by Conservation International. He could not tell me anything else without clearing names, but he did tell me to stop using his personal e-mail address.

I did not see evidence in the gorge of Friedman's picturesque story. I did not see rural farmers all gathered around a book of their legal options at the public library or waiting outside the doors of the government offices on Monday morning to voice their

newly educated opinions. In fact, I am quite sure that most of the people I talked to had never been to a library or government offices. I did hear over and over again that information was obtained through “tingshuo” *hearsay*. Some told me that they got their information from the newspaper. But not directly—from a friend who had a friend who might have read the newspaper.

Obviously the international media is not reaching down into the gorge where these people live, dropping newspapers on each family’s doorstep. Obviously they would not be able to read the news if it was. But columns like Friedman’s are important, even if they are a glossy representation of the actual events. Any international press is valuable. I asked a lot of the hikers I met while hiking the gorge this past time if they were getting any news about the Hutiaoxia dams in their own countries. Although this is admittedly a small and skewed sample set, most people said that they were not seeing much press. There have been a few articles that are accessible online, and some blog-talk (Blogs are online columns that readers can usually respond to openly.), but the issue has not reached the magnitude that it deserves.

And maybe it is only because I am an American and therefore (at least in theory) believe in ideas such as freedom of information and freedom of speech, but the indiscretion here is not chiefly the environmental impact of these dams or the people who will be displaced, but the lack of information available. It is appalling. Ma Jun, a writer and environmentalist who helped to draft a petition against dams over the Nujiang (Salween) River last year wrote, “The key issue is not necessarily whether to build the dam, but to guarantee a democratic, informed and participatory decision-making process [Here the jump from environmentalism to pro-democracy is nothing more than a flea’s leap.]” (Lin,

“Civic Voice Louder in China”). Li agreed; [The public] must be informed. They can then say yes or no. All reports need to be accessible. The debate is over why the material is not released.” And released not only to people in Kunming who have access to a daily newspaper, 24-hour news, and the internet, but to the people who will be effected by this project, those who live in the gorge and have always lived there. This is the role of the government and the media in a democratic country; in China I do not know who can do it.

Balancing Economic Growth and Environmental Protection

“Economic growth, if not environmentally friendly, is not sustainable.”

–Chen Hong, *China Daily*

More and more people coming into the job market (especially taking into account the number of people currently moving from the country to the city to find jobs) made the government reluctant to close down serious polluters or require new industries to incorporate the latest pollution control. It would impede development (Hertsgaard). The government, in short, would rather support the workers than protect the water.

Today China is one of the world’s largest polluters, second only in many cases to the United States. The United States is still cleaning up from the Industrial Revolution, when the global environment was altered in the most significant ways in history. Only because the United States has gone through that period and now understands that changes must be made (present U.S. leadership excluded) can we begin to take those steps. But the world would not be able to recover from another Industrial Revolution, so China needs to follow a cleaner path to industrialization.

At this point it appears that China has taken a hands-off approach to the environment. Every year, five to twelve percent of China’s gross domestic product goes towards “undoing environmental damage,” according to an article in *Interpress Services*

(12 October 2004). The hands-off approach is clearly not working. Treating natural resources as free goods has led to scarcity and waste. The environment, since it is still essentially a public good in China, needs more regulating than the economy does.

Government intervention is justified because China has let the free market loose to ravage a country where land, water and air are free. According to Deutsche Bank economist Jeremy Sisselman, "Government intervention with respect to the environment is often justified because it is an example of something that the free market will exploit."

The World Bank suggests in the article "China's Environment in the New Century" that the country needs a new environmental policy. China should channel investment into cleaner production, encourage material and energy efficiency and speed up conservation of scarce resources. The process should be cleaner, less scarce resources should be involved, and the end-products should be better quality. The article also encourages environmental taxes to be used to clean the environment (a novel idea), instead of to buy government officials large, polluting SUVs (not explicitly stated in the World Bank article). Public investments with environmental benefits should be made, like investment in wastewater systems that will conserve and clean the water (instead of building huge water diversion projects to create reservoirs to flush water out of dirty lakes hundreds of kilometers away). Finally, the World Bank suggests re-valuing the price of natural resources to reflect their total costs. The real cost to society of coal is 100 percent higher than the price in Beijing after damages to human health are taken into account (www.worldbank.org).

The environment is a good that is assumed to become more important as gross domestic product rises. In Mexico, after the North American Free Trade Agreement was signed, airborne pollution went up until GDP per capita reached 5,000 USD, and then it

went down. The curve to describe this process is called the Environmental Kuznet's Curve and until recently, this was assumed to always be the case. However, it only exists when investment, consumption and output go up at a constant but not optimal rate (steady but not too quick) and new, cleaner technology is adopted throughout the process. This is called strong sustainable development, and, during the industrialization process, is only possible when the optimal rate of new, clean technology is adopted (Bertinelli). The government can induce this process by giving rewards or incentives for developing more environmentally-friendly technology.

But China would rather develop first and worry about the externalities later on. In Shaxi, the village where there is nothing to recycle, there is a development project to capitalize on the potential for tourism in the area. The village is close to Dali, a major tourist spot, and developers want to tap into the subgroup of Western tourist/backpackers who want to experience "real" China. The development was happening in a set of stages, and the developer spoke with our SIT class about his company's progress. The first step was to restore the town square in 2000. The second step was to promote tourism in the area. Not until next year, six years after the beginning of the project, was the sewage system to be revamped. This is fairly representative of Chinese policy in general. First development, then environment. Until then, the river is a fine place for the trash.

Since China's World Trade Organization accession in 2001 the country has been slowly opening its doors, letting a little more light in each day. The country is committed to making protocol commitments that will inevitably lead to some short-term economic losses. Unemployment has increased, in domestic industries as they are opened up (in the form of imports as well as goods and services made by foreign-funded firms in China) to foreign

competition. Since the accession, China has reduced tariff levels to under 10 percent, gradually eliminated quotas and licenses that restrict import flow, and among other things lowered tariffs on imports of agricultural commodities to almost zero. (Lardy, www.brook.edu) This last point has significant environmental implications. China will move away from agriculture and to areas of comparative advantage, like labor-intensive industries such as factory work. These industries have a much higher chance to be major polluters. This is another reason for the government to provide incentives for cleaner technology.

Dam Fever

China's history of dam building stretches back to Liberation in 1949. From 1949 to 1990, over 86,000 dams were built. Twenty-two thousand qualify as "large dams," giving China 45 percent of all large dams worldwide (www.gvbchina.org). Only two rivers in China remain un-dammed, the Yalong Zangbo, which flows from Tibet to India, and the Nujiang (www.gvbchina.org). Dams bring great short-term economic gains. Huaneng Group, the power company in charge of the Hutiaoxia dams, will make eight billion RMB/year in income, a lot of which will go to the Lijiang government in the form of taxes that must be paid on the water (Jia, "Consider Opposing Views").

The Chinese government planned to spend 20 years damming the Nujiang, starting in 2003 with a set of 13 dams, flooding much of the Three River's World Heritage site along the river (www.gbcc.org.uk). The project aimed at producing more than 100 billion kilowatts of electric energy annually (www.gvbchina.org). Many of the same issues that are involved in the Hutiaoxia dams were also involved in the Nujiang dam project: flooding of a World Heritage Site and biodiversity hotspot, existence of minority cultural

heritage and Tea and Horse trade route, mass relocation and possibility for seismic activity.

So in June of 2003 television started to report that hydropower was being explored on the Nujiang in northwest Yunnan. Newspaper articles followed. Pressure from neighboring countries downstream helped to put pressure on the government. In December of 2003, the Thai government demanded that the Chinese government suspend the Nujiang dam project immediately in a letter endorsed by both Thai and Burmese organizations. The letter argued that China must not block a river that is shared by three different countries (www.gbcc.org.uk).

In late September China's National Environmental Protection Bureau held a meeting (behind closed doors, obviously) to which they invited 30 experts in zoology, forestry, farming and geology to comment. Journalist Ralph Litzinger writes in an article on the subject, "The story now runs that every one of these experts opposed the dam. They argued that it had been poorly thought out, excessively driven by the profit motive, and would adversely affect the biodiversity of the region and further strain relations between the government and the region's multiple ethnic minority populations" (www.gbcc.org.uk).

NGOs began to get involved in late 2003, including Friends of Nature, a Chinese NGO committed to promoting environmental protection and sustainable development in China by raising awareness, and Green Volunteers, an international environmental volunteer network. These NGOs among others gathered together with 20 journalists, environmental protection volunteers and conservation scholars from Beijing and Yunnan to trek down the Nujiang, meeting with local officials, asking people what their concerns were, and gathering information. They hoped to display their findings on March 14th of 2004, International Day of Action Against Dams. The government pressured the group to

cancel this plan, so instead they made a website to publish their findings.

In early April Premier Wen Jiabao ordered the dam project to be suspended, because it was getting too controversial. He called for a more extensive study of impacts and more involvement from communities. Whenever people ask me whether or not the Hutiaoxia dams will be built, I tell them about the Nu River dams that were not built. This project was further along than Hutiaoxia, but NGOs together with the media and the local people stopped it. It's not too late!

It is impossible to talk about dams in China without mentioning a dam that was built—the massive Sanxia dam. This dam is one and a half miles wide and more than 600 feet high. It will join the Great Wall and other large dams as a man-made structure that is visible from space (www.space.com). The reservoir created by the dam will be hundreds of feet deep and almost 400 miles long. Sanxia dam may end up providing China with as much as one-ninth of the nation's electrical production, replacing much of the coal energy that is now consumed. Sun Yat-sen proposed the project in 1919, and Mao Zedong had feasibility studies done in the mid-1950s. Although there was some criticism of the project in the late 1980s, the movement never fully materialized. By 2009 the reservoir will be at its full height. One million people will have been displaced (www.cnn.com, 2001).

What has happened since last spring?

Lynne M. Zummo *SIT Spring '05* wrote an independent study paper called “The Powers the Pulse,” about Hutiaoxia. Her paper was primarily an ethnography about a few of the people who live and work in the gorge. She also included some information about dam plans and effects. At first I worried that my paper would be too similar; it's only been a few months and maybe nothing had changed. In fact, there have been a few key

developments.

First, Xiao Liangzhong's death brought media attention to the issue—Li said that is the event that made people start to notice. There is also a group of people who Xiao was working with to raise awareness, but Li did not talk more specifically about this. A CCTV documentary also brought light to the issue in a way that nothing else could; television reaches 84 percent of the population in China, with more than 900 regular viewers (www.worldpress.org). At the governmental level, there have been two provincial meetings where experts have exchanged information about the legitimacy of the project, with no press about what was actually discussed (Li).

The decision-making process

“Give him alcohol; tell him don't destroy our life.”

—Sean Xia, after telling me to talk to the government officials in Zhongdian

Lack of transparency has been a problem in China throughout the process of big-decision-making. For some people who question the legitimacy of the dams (besides the ones who live in Hutiaoxia), the question is not whether a dam will be built or not, but whether the process is open to the interested public. According to Nu Zhi of the Chinese NGO Protection International, it is not a question of whether a dam will be built in a particular spot, “but a matter of how decisions on large-scale engineering projects are made. The dam could be built if it was assessed in a democratic way, and the benefits really were found to outweigh the costs” (*Three Gorges Probe*, 8 October 2004). Li agrees; “Environmental groups are not saying, ‘Building dams are bad.’ But build with caution. The socio-economic impact has to be assessed. And [the possibility of] natural catastrophes.”

There is also the problem of lack of transparency in the assessment of the

Environmental Impact Statements. Since 2003, the government has had to release an assessment of the environmental impact for all major construction projects. (This is what the Nujiang anti-dam activists used against the government in 2003.) For the Hutiaoxia dams, the government has promised to release this statement by 2008, and not until then can the major construction process begin (although much preliminary work can, and has, been done).

Dam Policy in the United States: How “green” is hydropower?

Until relatively recently, dams were considered a green alternative to many other types of energy. Today there is much dialogue in the United States about scaling back dam construction and even deconstructing dams with negative impacts on the local environment. In 1998 the Quaker Neck Dam in North Carolina was removed because it blocked fish from migrating and in 1999 the Edwards Dam on the Kennebec River in Maine was removed for similar reasons. Dams are found to block silt and keep fish from returning to their native habitat to spawn. The area that becomes submerged by the reservoir causes loss of forests, grasslands and wildlife. This loss can have irreversible effects on the larger ecosystem. Dams also increase salination downstream (www.gvbchina.org). Some are even arguing now that hydropower plants are not “greener” than coal-burning plants. “Researchers, after studying an hydroelectricity project in Brazil, argued that the total “carbon” quantum caused by deforestation and the putrefying plants entering the reservoir is much greater than the total CO₂ generated ... by the coal-powered plant” (www.gvbchina.org).

Most recently, *Water Power Magazine* reported that the New Jersey Zinc Company dam on the Lehigh river in Pennsylvania will be torn down, starting this December and

concluding in March of 2006. According to the online magazine, the dam will be torn down “for producing environmental problems by blocking the passage of American shad and other native migratory species, as well as changing the natural river ecology” (www.waterpowermagazine.com).

According to the United States Environmental Protection Agency’s website, 550 dams will need to be re-licensed in the next ten years. Since 1986, the agency has been required to “weigh a dam’s impact on wildlife and recreation against its economic benefits” (notes.tetrattech-ffx.com). Dams that were built before environmental impacts were fairly assessed will need to pass certain regulations for updated licenses.

While in the United States dams are being torn down faster than they are being built, in China they are (for the most part) still a huge part of China’s grand energy scheme. According to an article in the *Three Gorges Probe*, “a lack of overall plan[sic] and long-term ecological perspective on China's river systems and overly simplified analysis of hydropower capacity have rendered rampant exploitation of water resources possible (www.gvbchina.org).”

Conclusions

**“Pollution everywhere. Have to take airplane to see blue sky.
So that’s why this gorge you have to protect.”**

-Sean Xia

Three days ago I braved the Kunming traffic on my bike, wheeling in and out of speeding taxis and honking busses to get to the bus station to buy a sleeping bus ticket for that night. Qiaotou-bound. Two friends wanted to see Hutiaoxia and I could not resist the invitation. I rationalized the trip to myself: I needed a jump-start on my paper; I had to get Sean’s e-mail address; my friends needed a guide.

Unfortunately, the first night my forever-upset stomach had a tantrum three-year-old style and I mildly regretted my decision to go. My previous Hutiaoxia experiences were magical, thought-provoking and meaningful and I did not want to cloud them with a stomach-ache. But by the next day, as I was resting in the sun at Sean's drinking "jiang cha gen fengme" *ginger tea with honey*, and looking at my first cloud-free view of the jagged peaks of Haba Snow Mountain, I still felt like it was not my time to leave. It always seems premature. The four-year-old girl who had finally (after three visits to Sean's) warmed up to me was unbraiding and then attempting to re-braid my hair—"hen piaoliang" *very pretty*. The sun was still warm and the sky was clear, and could hear, but not see, the Yangtze beneath us. If the dams are built, this rocking chair, these flowers and this guest-house will be drowned underneath 70 meters of water.

The meinbaoqi showed up to take us back to Qiaotou and I felt what I always feel: Refreshed, but rushed. Relatively clean but still wanting a shower. As if I am turning my back on my home. As if I am leaving China, after seeing all of her cuts and bruises, with Band-Aids, unused, hanging out of my pocket.

Reflections and Thanks

There is more I want to write, more articles I haven't read and more resources I haven't tapped into. That is the drawback of researching such a huge subject in such a small amount of time. Although in Zhongdian and in Lijiang time crawled by—I did not seem to be learning anything and I was not being productive—now my time in China is over but there is so much more I want to learn.

I spent the first 10 days of my ISP meeting with Li Bo and David Abrahamson, doing research online and building up general background knowledge of the subject. I left

for Hutiaoxia on the night of the 13th in a sleeping bus. I spent four days and three nights in the gorge, two with Jack and the last night by myself. I took a public bus to Zhongdian from Qiaotou after taking a meinbaoqi from Sean's to Qiaotou. I spent two nights in Zhongdian, and then took a bus to Lijiang. There I waited around all weekend to talk to TNC and they ended up not helping me. I bought a bus ticket back to Kunming directly after meeting with TNC on Monday morning, and I was back in Kunming by Tuesday morning. I worked on my paper in Kunming for about a week, and then on the first of December I took another sleeping bus back to Qiaotou. I stayed in the gorge for only one night before returning to Kunming on December 3rd.

Doing research here was frustrating, first and foremost. My lack of Chinese proficiency (Every SIT student mentions this in conclusion.) kept me from a lot of information. There is always a language barrier. Also, in China things do not work as they do in the United States. In an e-mail from Stefan Kratz (of TNC) he told me that to really get to the bottom of this issue it would take moving to Beijing and years of relationship-building, which is time that I obviously did not have. Although that email was depressing, it was also empowering. I found a few people who wanted to talk to me, and to these people I am thankful.

I want to thank Li Bo from CBIK for his help and dedication to educating himself and others about the Hutiaoxia dams project. Also Sean Xia, for his insights and initiative. I want to thank both of these people for refusing to say, "These dams will be built."

I also want to mention my friend Jack Lin, for hiking Hutiaoxia with me, for translating, for asking the questions that I did not think to ask. For being my ears, even though I never bought him an Air-soft gun.

Other Possible ISP Topics

- Brainworms in China's Lakes and Rivers: The Causes and Effects
- China's Invasive Species
- How NGOs in China can better work together
- Sean Xia's Biography

**Drowning Shangrila:
Balancing Environmental Protection
With Development in China**

Works Cited

Abrahamson, David. Interviewed by Tessa Venell. 10 December 2005. French Café, Kunming, Yunnan, China.

“Battle for Sangri-la.” *The Standard*. 26 January 2005.
<http://www.thestandard.com.hk/stdn/std/Focus/GA26Dh02.html>. 5 December 2005.

Bertinelli, Luisito, Eric Strobl and Benteng Zou. “Sustainable Economic Development and the Environment: Theory and Evidence.” *Institute of Mathematical Economics*. July 2005.
<http://bieson.ub.uni-bielefeld.de/volltexte/2005/734/pdf/369.pdf>. 5 December 2005.

Bezlova, Antoaneta. “Tiger Leaping Gorge draws strength from Nu River activists.” *Interpress Service*. 12 October 2004.

Cai, Jane. “Opponent of dam wins posthumous honor.” *South China Morning Post*. 23 April 2005.

Chen, Hong. “Hutiao dam project demands reconsideration.” *China Daily*. 28 September 2004. http://www.chinadaily.com.cn/english/doc/2004-09/28/content_378320.htm. 5 December 2005.

“Contract awarded for dam removal.” *International Water Power and Dam Construction*. 30 November 2005.
<http://www.waterpowermagazine.com/story.asp?sectionCode=130&storyCode=2032851>. 5 December 2005.

“Dam Removal Becoming Widespread.” *Nonpoint Source News*. December 1998.
<http://notes.tetrattech-ffx.com/newsnotes.nsf/606a2768c7ff5f63852565ff0061ae0d/f1ce364f2d5ba995852567320077dfe4?OpenDocument>. 5 December 2005.

Dai, Shoumi. Interviewed by Jack Lin and Tessa Venell. 14 November 2005. Naxi Family Guest-House, Hutiaoxia, China.

“Economic Development and the Environment: Recognizing Trade-Offs.” *Student Readings* 3.2.
<http://www.business.uconn.edu/redirect/CIBER/sitefiles/resourceguides/vol3/3-3.2.pdf>. 5 December 2005.

Economy, Elizabeth C. [The River Runs Black](#). Cornell University: 2004.

Edele, Andreas. "Non-governmental organizations in China." *Centre for Applied Studies in International Negotiations*. May 2005. <http://www.casin.ch/web/pdf/chinafinal.pdf>. 5 December 2005.

Friedman, Thomas. "Tiananmen just one view of China." *The New York Times*. 9 November 2005.

Feng, Defang. Interviewed by Jack Lin and Tessa Venell. 15 November 2005. Halfway Guest-House, Hutiaoxia, China.

Feng, Defang. Interviewed by Jack Lin and Tessa Venell. 16 November 2005. Halfway Guest-House, Hutiaoxia, China.

"Give the Public a Voice." Editorial. *China Daily*. 7 October 2004. http://www.chinadaily.com.cn/english/doc/2004-10/07/content_380118.htm. 5 December 2005.

Huo, Daifei. Interviewed by Jack Lin and Tessa Venell. 14 November 2005. Little Snack-stand, Hutiaoxia, China.

"Hutiao gorge hydroelectric station."
http://www.lijiang.com.cn/english/investment/water_con/water_sta4.htm. 5 December 2005.

Jia, Hepeng. "Consider Opposing Views." *China Daily*. 11 September 2004. http://www.chinadaily.com.cn/english/doc/2004-11/09/content_390477.htm. 5 December 2005.

Kennedy, Bruce. "China's Three Gorges Dam." *CNN Interactive*. 2001. <http://www.cnn.com/SPECIALS/1999/china.50/asian.superpower/three.gorges/>. 5 December 2005.

"Lake Profile: Dianchi." *Lake Net*. 2003-2004. <http://www.worldlakes.org/lakedetails.asp?lakeid=9109>. 12 December 2005.

Lardy, Nicholas R. "Issues in China's WTO Accession." *The U.S.-China Security Review Commission. The Brookings Institution*. 9 May 2001. <http://www.brook.edu/views/testimony/lardy/20010509.htm>. 5 December 2005.

Leu, Siew Ying. "Fears for gorge as dam work begins." *South China Morning Post*. 1 October 2004.

Li, Bo. Interviewed by Tessa Venell. 12 November 2005. French Café, Kunming, Yunnan, China.

Li, Bo. Interviewed by Tessa Venell. 25 November 2005. CBIK office, Kunming, Yunnan, China.

Lin, Gu. "Civic Voice Louder in China." Unpublished. 12 November 2005.

Litzinger, Ralph. "Damming the Angry River." *China Review Magazine*.
<http://www.gbcc.org.uk/30article3.htm>. 5 December 2005.

Liu, Shoulie. Interviewed by Jack Lin and Tessa Venell. 15 November 2005. The Rock that the Tiger Leapt On, Hutiaoxia, China.

Masui, Toshihiko. "Evaluation of environmental conservation and economic benefits from environmental industry-case study of Japan and tentative application to China." *Cleaner Production in China*. September 2001.
<http://www.chinacp.com/eng/cpconfer/iccp01/iccp11.html>. 5 December 2005.

"Preserve Nujiang, a FREE-RUNNING River for China and the World."
<http://www.gvbchina.org/EnglishWeb/Articles/PreserveNujiang.htm>. 5 December 2005.

Ren, Mei'e. An Outline of China's Physical Geography. Foreign Language Press: 1985.

"Saving Shangrila." Editorial. *New York Times*. 9 November 2004.

Shufro, Cathy. "Damming Tiger Gorge." *Emagazine.com*.
<http://www.emagazine.com/view/?2168>. 5 December 2005.

Sisselman, Jeremy. E-mail message. 28 November 2005.

"Stop the Hutiaoxia dam!" *International River's Network: China*. 26 September 2004.
<http://www.irn.org/programs/china/index.php?id=040926hutia.html>. 5 December 2005.

"Supporting Environmental Management in China." *The World Bank*. 2005.
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPREGTOPENVIRONMENT/0,,contentMDK:20515211~menuPK:502915~pagePK:34004173~piPK:34003707~theSitePK:502886,00.html#water>. 5 December 2005.

Thomas, Bella. "What the World's Poor Watch on TV." *World Press Review*. March 2003. 50-3. <http://www.worldpress.org/Europe/947.cfm>. 5 December 2005.

"Tiger Leaping Gorge under threat." *China Youth Daily*. 8 October 2004.

Tina. Interviewed by Jack Lin and Tessa Venell. 15 November 2005. Tina's Guest-House, Hutiaoxia, China.

Wang, Youzhen. Interviewed by Jack Lin and Tessa Venell. 16 November 2005. Mid-Gorge

Place, Hutiaoxia, China.

Xia, Sean. Interviewed by Tessa Venell. 16 November 2005. Sean's Guest-House, Hutiaoxia, China.

Yang, Fang. Interviewed by Jack Lin and Tessa Venell. 14 November 2005. Changxing, Hutiaoxia, China.

“Yunnan's Jumping Tiger Gorge to be submerged under reservoir.” *Interfax* . 13 September 2004.

<http://www.threegorgesprobe.org/tgp/index.cfm?DSP=content&ContentID=11470>. 5 December 2005.

Zummo, Lynne M. “The Powers that Pulse.” *SIT Yunnan, China*. ISP. 2005.