

## The Conflict between Two Civilizations: On Nature-Based Solutions

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The conflict between ecological and industrial civilizations here, different from what was presented in Samuel Huntington's *The Clash of Civilizations and the Remaking of World Order*, is about the methods, technologies, and world views. This is a tortuous struggle in which humans battle generation to generation for civilization to survive. The envisioned beautiful ecological civilization requires ideological reform and technological advance—a true revolution, in some sense, by solutions supported by the nature, which can respond to the social and economic demands of change more cost-effectively. That is to say, natural forces, instead of the engineering approaches symbolized by industrial civilization, may contribute to the urban resilience<sup>21</sup> in their ingenuity addressing crises such as climate change, flooding, and water and soil pollution.

On March 14, 2017, I got a sudden call from Xi Zhinong, a wildlife photographer for help: “They are cementing the riverbed of the Shuangyuan Stream in Dali. Nine concrete dams are to be built. It is cruel! How can I protect the stream?” Having lived near the stream for about ten years, Xi and his daughters enjoyed the cool water, rocks, and wildflowers that bloomed in different seasons. This cementing project would deprive them of the joy their beloved natural stream brought. I noticed in the video he sent that both the rocks and plants in the stream were being shattered and removed by excavators near his house. His choked voice made me feel the pain he was suffering.

Xi called me because in 2005 we had worked on an anti-seepage project for Yuanmingyuan Park in Beijing, and had shared similar feelings about “letting nature breathe.” For the Dali case, we reached out the local press and persuaded the local government to halt the cementing project. Unfortunately, we failed to rescue the stream. A year later the project started again in a more violent way and the Shuangyuan Stream was finally cut apart by the nine concrete dams. The authorities had gathered many so-called “experts” and administrative forces in the name of “guaranteeing the safety of people’s lives and property,” yet they ignored the protests of ecological experts. From this project, higher-level government financed several million yuan and the local government achieved GDP growth, while engineering enterprises received huge profits. However, the economically beneficial project was achieved at the cost of natural ecosystems whose worth had accumulated for dozens of centuries. Xi and his daughters could no longer have access to the eco-experience in the beautiful valley of the Cangshan Mountains.

On April 20, 2020, the eve of World Earth Day, Xi called again. I had not heard from him for three years. “They come again!” he cried, “Instead of millions of RMB invested to the Shuangyuan Stream, they will channelize other five streams of ‘the Cangshan Eighteen Streams’.” This time, the project would cost three hundred million yuan. “Did not they notice the loss of

natural resource and the accelerated water flow speed due to the dam construction three years ago? We must act at once to save these five streams!” He sounded desperate. Shortly afterwards, volunteers who dedicated themselves to nature protection launched an effort to save the river. So far, the conflict between the industrial civilization and ecological civilization about how to approach the Erhai Lake and the streams of the Cangshan Mountains are at a deadlock. Today, the authority’s response to nature protection is unassertive and inspiring, compared with 20 years ago.

I still remember the conflict 20 years ago between the government and environmentalists and scholars who opposed Beijing’s project on river management. That standoff ended in failure and was labelled as an interference in public affairs. Almost all the rivers through the downtown of Beijing were cutoff, channelized, or dammed in the name of “flood mitigation,” “pollution control,” and “improvement of living environment.” Environmentalists and scholars had warned that they would pay for this recklessness. Ironically, in less than ten years, Beijing began to dismantle the cement along rivers under a strategy of “bringing nature back,” but urban rivers keep getting channelized<sup>[2]</sup>. In the cases of both Dali and Beijing, no goals of flood control, pollution treatment, or environmental beautification were achieved. Instead, urban resilience was consumed while water and environmental problems were only becoming more severe.

A same conflict between ecology and industry occurred in 2005 over the anti-seepage project of Yuanmingyuan Park. This experience highlights a beginning of China’s “nature-based solutions.” On March 22, 2005, I received a call from Zhang Zhengchun, an ecologist. With the same emotion as Xi in the Dali case, he anxiously told me that the lakebed of Fuhai Lake in Yuanmingyuan Park was being covered with anti-seepage geotextile. Because of this call I joined in a prolonged protest against the project. Other experts in the fields of ecology and environmental protection, including Wang Rusong (deceased), Liang Congjie (deceased), and Cui Haiting, were also involved in this effort. On March 28, People.cn took the lead to speak on this matter which promoted the State Environmental Protection Administration to hold a public hearing on the lakebed anti-seepage project. This coverage brought wide-spread attention to the project and helped create a national ecological enlightenment movement.<sup>[3]</sup> Although the Administrative Office of Yuanmingyuan Park completed the anti-seepage project in a compromised way, the official departments of the State Environmental Protection Administration and the official media, such as People.cn, all stood with the environmentalists. This months-long effort ended up with a big win for the ecological protection movement led by the public.

The night of July 21, 2012 was also a moment to remember when a heavy storm exposed the fragile resilience of Beijing, as 79 lives were lost to flooding streets, underpasses, and cars. After decades of hydrological management, how did Beijing’s water flow become so volatile? This is by no means an academic issue, but a matter of public awareness—especially the one for the decision makers. To this end, four days later, I submitted a report entitled “Recommendations on the Establishment of a ‘Green Sponge’ to Solve the Flood Disaster in Beijing” to government official<sup>[4]</sup>. The report quickly spread in the form of an open letter through mass media<sup>[5]</sup>.

On August 25, 2012, Ms. Hu Jinciao, a television director at China Central Television, helped broadcast a program for the “Breathing River.” The segment interviewed several officials and

landscape architects advocating for a “green sponge” approach to issues of urban waterlogging. This marked a leap from grassroots movement to official policy. Such a change appeared a year later. On December 12, 2013, President Xi Jinping spoke at the Central Working Conference of Urbanization on the need for upgrading urban drainage systems. President Xi emphasized that we should give priority to retaining rainwater and leveraging natural forces to drain water, so as to build Sponge Cities where stormwater can be naturally conserved, infiltrated, and purified<sup>[6]</sup>.

Twenty years, though a long time for individual efforts, is short for the development of civilization. The road from protesting engineering projects in Beijing to implementing nationwide Sponge Cities will be a tough journey, also for developing nature-based solutions responding to other pressing environmental problems (water and soil pollution, habitat loss, etc.). But this work is needed. China must take this route to realize healthy development for all cities. This might also become China’s greatest contribution in tackling global ecological and environmental problems!

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