

CHINA ENVIRONMENT FORUM MEETING SUMMARIES

U.S. Conservation NGOs Finding a Niche in China

4 June 2002

*Jim Harris, International Crane Foundation
Lü Zhi, Yale University*

By Tina Chu-yun Liu, Timothy Hildebrandt, and Jennifer L. Turner

Environmentalism in China has long been dominated by the campaign to save the country's most famous endangered species—the giant panda. Indeed, worldwide the image of the panda has become synonymous with conservation, best exemplified by WWF's well-known logo. And yet, despite this domestic and international attention, efforts at widespread animal and habitat conservation in China still face many roadblocks. The International Crane Foundation (ICF) and WWF were among the first international conservation nongovernmental organizations (NGOs) to achieve notable success in China. Despite the different priorities of these two NGOs, they encountered parallel challenges and have learned similar lessons. At this 4 June 2002 meeting of the China Environment Forum, **Jim Harris** from ICF and **Lü Zhi**, formerly of WWF, presented their respective conservation projects, outlined the strategies used to achieve their goals, and discussed the challenges of conservation work in China.

ICF's Conservation Efforts in China

Home to at least eight different species of cranes, China was an ideal location for the International Crane Foundation (ICF) to implement their unique brand of conservation work. ICF first visited China in 1979 and conducted numerous surveys on crane habitat and migration—ten years before even Chinese biologists started to systematically observe cranes. When ICF began undertaking project activities in the mid-1980s they focused on providing advice to various nature reserves and investigating their effectiveness in protecting cranes. However, after meeting with various reserve staff Jim Harris found that the issue of crane conservation was not well understood; the reserve authority controlled the birds, but they did not take charge of the water and agriculture. Water pollution and crop encroachment into nature reserves were the main causes of dwindling crane populations in China.

With this new understanding, ICF changed its course of action. Instead of simply providing advice to reserve managers, Jim Harris and his staff resolved to engage farmers in conservation initiatives. Educating citizens of the environmental problems that directly impact cranes, Jim Harris theorized, would be key to the cranes' survival. For example, it was common practice for farmers to partially drain wetlands not only to plant more crops and develop aquaculture, but also to get rid of cranes. Farmers feared the birds would eat all of the fish, leaving little for them to catch and ultimately destroying their livelihood. The unintended result was, however, that the wetlands began to die, along with cranes. To resolve this problem, ICF conducted a cultural, goodwill exchange program, displaying slide shows and providing telescopes to enable residents to observe how the birds lived in the wetland and highlight how humans and birds were not competitors in using the nature reserve.

In 1991, ICF decided to further narrow its focus, selecting one small site in the Cao Hai Nature Reserve to tackle economic issues facing local residents, which ultimately would help conserve the wetland in the reserve. Cao Hai was in the poorest county in Guizhou—one of the poorest provinces in China. Staff members began not by talking about the birds, but initiating discussions with village farmers to hear their concerns and assess economic needs. With the help of the New York-based Trickle-Up Program, ICF distributed small one hundred dollar grants to groups of residents. Grantees were allowed to use the first fifty dollars to start a business and reinvest part of the money. If successful, they received another fifty dollars.

The farmers were free to choose any kind of economic activity with the stipulation their businesses were not detrimental to the nature reserve. In the beginning, the farmers all chose to raise pigs, as they knew the trade well. Adding thousands of new pigs in the watershed created animal waste problems that threatened the environment. ICF helped divert their business from pigs

and gradually a large variety of businesses emerged. For example, ICF and its partners helped some farmers recycle old oil barrels into stoves. Other villagers soon followed, eventually creating a flourishing market that supplied Guizhou and eastern Yunnan. As a direct result of the ICF grants, villagers all but stopped fishing in the lake

Zemin and Premier Li Peng to ask the government to protect panda habitats. Deputy Premier Zhu Rongji responded by assigning the habitat to a protected reserve. WWF understood that dialogues with top leaders would not always solve conservation problems. In fact, despite high-level pronouncements, massive logging was

Home to at least eight different species of cranes, China was an ideal location for the International Crane Foundation to implement their unique brand of conservation work.

because they made more profits by recycling the oil barrels. Most recently, ICF has embarked on village planning to help farmers design ecotourism projects that provide critical income and help preserve the nature reserve. ICF's efforts at Cao Hai have created a true windfall for both the human and crane populations.

ICF's bottom-up approach that addresses local people's needs and respects their decisions has dramatically changed the relationship between the Cao Hai reserve staff and residents. Traditionally, reserve policies were not concerned with people—local residents were viewed simply as obstacles for the government to move away, keep out, or control. With ICF assistance, the reserve has helped residents secure both financial and technical resources to help to improve their livelihood, so citizens have realized that preserving the reserve is beneficial to them. Balancing human and ecological welfare is central to ICF's mission, which has been proven effective and successful at Cao Hai.

WWF's Conservation Efforts in China

As a graduate student researching pandas in the early 1980s, Lü Zhi discovered that logging was gradually destroying panda habitat. At the time, pandas could still survive because the state-controlled logging industry was relatively small. However, in the early 1990s, the timber market was opened, providing incentives for logging companies to cut down large numbers of trees, despite government regulations on selective and sustainable logging. To address the problem of excessive logging, WWF initially employed a two-pronged approach in its conservation work in China in 1979—bottom-up discussions on the prospect of a future without forest resources with residents near nature reserves and top-down dialogues with the Chinese government on ways to strengthen nature reserve policies.

The strategy of engaging government leaders continued for several decades, with varied success. For example, in 1993, WWF wrote a letter to President Jiang

continuing to encroach on panda habitats. Therefore, in 1995, WWF shifted attention back on the local level, employing a more bottom-up orientated strategy to promote habitat conservation.

Like ICF, before taking action WWF first tried to understand the community and nature reserve situation. WWF staff not only dealt with the visible threats to pandas (logging and poaching), but also began tackling some of the root causes. In the process of surveying local issues WWF prioritized local government involvement, because they had the capacity to employ the successful model to other areas. After five years of research in panda areas, WWF was able to design complementary community development and conservation projects.

While WWF began as a small group of three workers (Lü Zhi was its first Chinese employee) studying panda issues, after registering in China, this NGO has expanded to nearly 40 people working on wetland protection, environmental education, forestry, energy, and climate change.

Lessons Learned and Constraints

Despite successes at the local level, international NGOs like WWF and ICF face many constraints in China. For example, in the 1980s WWF discovered there were no laws or clear information on how to legally register, open an office, and hire staff. WWF needed registration to legally undertake its activities, but the Department of Civil Affairs, which registers nonprofit organizations, only dealt with domestic organizations, not international ones. Eventually WWF was able to register, but many other international (and domestic) NGOs in China remain in a legal grey area. The main challenge for international NGOs hiring employees in the 1980s and early 1990s was that people were not allowed a second job outside their assigned work unit, making few environmental specialists available. Additionally problematic was that international environmental NGOs wishing to work in China must bring outside funding, for China lacks

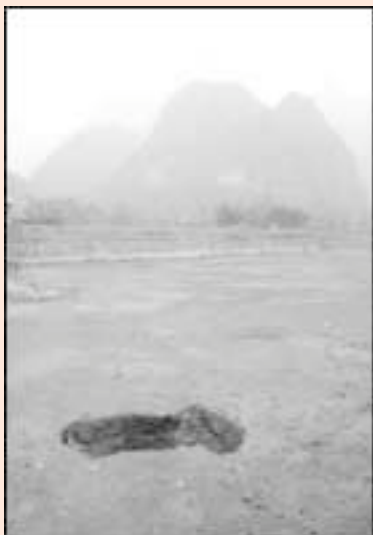
domestic foundations and there are no tax exemptions for nonprofit organizations.

Despite bureaucratic challenges, WWF and ICF have succeeded in establishing effective projects in China. Through on-the-ground research and pilot projects both NGOs have learned that significant improvements in endangered species and biodiversity protection in China can only develop by combining conservation and poverty alleviation. Specifically, it is crucial for conservation organizations to work with the community to identify alternatives and change the hostile dynamic between those working in nature reserves and those living outside. ICF

and WWF have brought in new ideas, as well as problem-solving and planning techniques that can be adapted to the Chinese context. Most useful has been the participatory decision-making approach, which can give voice to communities and create greater transparency within local governments. Moreover, by building up new networks of cooperation among citizens, nature reserve managers, research communities, and local governments, WWF and ICF projects have strengthened local capacity to deal with conservation and community development challenges.

Karst Regions in Southwest China

Below are scenes—a sink hole, a canal and a karst mountain—from karst regions in southwest China where the U.S. Geological Survey, Armed Forces Institute of Pathology and the Hoffman Environmental Research Institute at Western Kentucky University are carrying out environmental health initiatives. See “Natural Geologic Conditions, Environmental Challenges, and Human Health in Southwest China” meeting summary on p.180.



Water Crises in China and Pakistan

12 June 2002

Naser Faruqi, International Development Research Centre

Ma Jun, South China Morning Post (SCMP.com)

Sylvana Li, U.S. Department of Agriculture (Discussant)

By Timothy Hildebrandt and Jennifer L. Turner

The People's Republic of China and the Islamic Republic of Pakistan have enjoyed close relations since being founded (a mere two years apart) a half century ago. Described by the Chinese foreign ministry as "good all-weather friends," the close ties between China and Pakistan are exemplified by strong trade relations and the sharing of missile technology—their relationship has been brought closer, and military exchanges made more relevant, by mutual conflict with India. While their cooperation has been shaped by tensions and conflict with India, China and Pakistan both are being threatened by a potentially bigger crisis domestically—water scarcity. **Naser Faruqi**, International Development Research Centre and **Ma Jun**, SCMP.com, profiled the water crises in Pakistan and China at this 12 June 2002 meeting at the Woodrow Wilson Center.

The water crises facing Pakistan and China are strikingly similar—both suffer from water shortages, caused in great part by antiquated irrigation methods and inefficient, uneconomical farming. In both countries growing water pollution problems threaten human and ecological health. The Chinese and Pakistan governments have, thus far, been rather shortsighted in dealing with their water crises, preferring to search for new water sources in lieu of changing consumption patterns. In addition to posing threats to economic development, human health, and ecological quality, water problems have spurred migrations of farmers into the cities. As both Pakistan and China face challenges of regime legitimacy, neither can afford the economic or political instability posed by worsening water problems. Beyond simply identifying the problems, Naser Faruqi and Ma Jun outlined similar strategies to mitigate the water crises in the two countries.

Another Problem for Pakistan

The Pakistani government is currently combating numerous political, economic, and social problems—conflicts with India over Kashmir, refugees from

Afghanistan, high population growth, and severe poverty problems. While not necessarily front-page news, water scarcity is growing in Pakistan. Though heavily dependent on one river system, the Indus River, Pakistan has not always suffered from water scarcity. During the country's infancy, water availability was quite high at 5,600 cubic meters per person. This abundance of five decades ago plummeted to just 1,000 cubic meters water availability per person today. The water crisis in Pakistan is of particular concern, according to Naser Faruqi, because water plays an integral role in the country's economy—ninety percent of the agricultural output, representing one-quarter of the GDP, is reliant upon irrigation water while almost half of Pakistan's energy is hydroelectric. Additionally, Pakistan's water crisis has several serious health, social, and political implications.

Health implications: The serious water shortages in Pakistan have had a great impact on the health of the general population. Today 12 percent of Pakistanis have no access to improved water sources while 39 percent are without sanitation facilities. Dr. Faruqi noted that these shortcomings force people to consume polluted drinking water, which will increase the incidence of waterborne diseases. More pressing, perhaps, is the lack of water for irrigation purposes. Grain production is expected to fall short 11 million tons by 2010 and nearly 16 million tons by 2020. If the economy continues to falter, importing food to make up for agricultural shortfalls will not be an option—famine-like conditions may very well become a harsh reality.

Social implications: As the water supply in the Indus River continues to dwindle, seawater has begun to make its way into the delta, spoiling irrigated land and aquifers. Such water degradation and shortages decimate farms and spur mass migrations to major Pakistani cities. Most problematic, according to Dr. Faruqi, has been the pressure such population movement places upon urban

infrastructure. Similar to the situation in China, such migrants in the cities are often subject to discrimination and economic hardships.

Political implications: Eco-refugees, those citizens who have fled drought or infertile farmland for major urban areas, potentially contribute to an already unstable political situation in Pakistan. Massive population movements are, Dr. Faruqi noted, almost inherently unstable. In the case of Pakistan, however, the fight over ever decreasing water resources may prove even more threatening. During a severe drought in 2001, for example, rioters protesting drinking water shortages smashed windows and overturned cars in Pakistan's largest city, Karachi. In light of growing discontent over government cooperation with the United States in the "war against terror," not to mention the questionable means employed by Perez Musharraff in his effort to secure another presidential term, conflict caused by the water crisis is a destabilizing force that the present regime cannot afford.

As evidence of the government's awareness of the far-reaching implications of the water crisis, Dr. Faruqi cited some examples of Pakistani government initiatives:

- Two of the fourteen core areas of activities within the broad National Conservation Strategy (established in 1992) focus on water: irrigation efficiency and watershed protection;
- In 2001, the Pakistan Environmental Protection Council approved a National Environmental Action Plan that included a major focus on clean water;
- Provincial Irrigation and Drainage Authorities were formed in Punjab, Sindh, and Balochistan to improve irrigation management; and,
- The national-level Water and Power Development Authority has focused on building new canals and dams, extending irrigation networks, and reclaiming land damaged by water logging or salinity.

Though this growing government attention on the water crisis is commendable, Naser Faruqi is disappointed by the "gap between rhetoric and reality." The government continues to ignore the great depth of the problem, and therefore the initiatives put into action are shortsighted and often misguided. Most disturbing to Dr. Faruqi is the reluctance to employ true water conservation measures to reduce overall demand and change water consumption patterns. Instead the government simply "is just dreaming

of more water to tap." Integral for alleviating the water crisis in Pakistan is the need for education of the populous and involvement of the key stakeholders within the government, landlord, and religious communities who oppose water conservation. In short, Pakistan will need to undergo a broad paradigm shift to move onto a sustainable water use path.

Decreasing Population Growth

At the root of Pakistan's water crisis is, according to Naser Faruqi, an uneducated populous, unaware of the danger water shortages pose for the country. Pakistan's adult literacy rate is 45 percent, well below most of its neighbors and almost half China's 81 percent, a number that Pakistan could "only dream of." High illiteracy

makes water conservation education a difficult task. A largely illiterate population also has stymied efforts to curb uninterrupted population growth (2.5 percent annually). Dr. Faruqi noted in this meeting (and in his recently published book *Water Management in Islam* that most Pakistanis believe Islam forbids family planning. Though, in reality, this is not the case. A great number of Pakistanis are unable to read the Quran and dispel the myth for themselves. An increase of the adult literacy rate would likely lower the birthrate, for literacy increases contraception use and educated women tend to delay having children. Simply stated, a smaller population inherently consumes less water—a smaller population educated in the dangers of the water problems and means to avoid it, consumes even less.

Involving Key Stakeholders

In his discussion of solutions to Pakistan's water problems, Dr. Faruqi addressed the role of three key stakeholders in Pakistani society: landlords, clergy, and the government. The two largest roadblocks to solving the water crisis are landlords and conservative clergy. Landlords who own the sugar and cotton mills view efforts to conserve water as threats to irrigated agriculture, which has been the mainstay of their power. Therefore, it will be key to educate these landlords (as well as small farmers) how they could achieve equal or higher yields using water conservation methods. Uneducated clergy who oppose



Naser Faruqi

family planning and education for woman also often believe water is from God and should therefore be free. These conservative clergy hold considerable influence in Pakistan, thus educating the clergy as to the value of water conservation will be vital in moving the country towards more sustainable water use practices. The government also could play a particularly intriguing role as an agent for change. The current military dictatorship could actually use its great strength and power to improve the water situation. Much like the Chinese government, the Pakistani government possesses the power to affect great change, very quickly.

In addition to educating the public and softening resistance to water conservation, Dr. Faruqi argued that

the dubious distinction of delivering not one drop of water to the sea over a 330-day period. Ma Jun, who has written extensively on environmental issues in China for the *South China Morning Post*, described how water scarcity in northern China has led to the depletion of underground aquifers, the destruction of fertile soil in China's "breadbasket," and an influx of eco-refugees who have fled areas ravaged by drought and dust storms. As is with Pakistan, this migration has created an increased stress on urban areas.

Conversely, south China is annually inundated with floodwater. In 1998, floods on the Yangtze River—exacerbated in great part by upstream deforestation—led to a loss of thousands of lives and caused over \$20 billion

China is plagued by two paradoxical water crises—northern China suffers from regular drought while floods beleaguer the south.

Pakistan needs a broad paradigm shift to rescue itself from the water crisis—moving away from the supply management mindset to one that emphasizes demand management; evolving from an irrigation needy agrarian society to one more industrial, and promoting peace and food self-sufficiency at a regional level. In terms of food production, Pakistan's insistence on agricultural self-sufficiency at any cost must be reevaluated. Some kinds of crop production often do not make financial sense—importing sugar cane from Cuba, for example, is half the cost of producing it "in-house." This major shift would also involve a departure from harvesting the traditional crops of rice, wheat, and cotton in favor of less water-intensive crops. As part of this new paradigm, the Pakistani government needs to reevaluate its role in the region and its relationship with India. A less contentious existence with its neighbor could very well directly improve the water crisis if the two countries undertake joint research and share cross border flow forecasting. Over the long term, funds diverted from arms budgets could be used to improve education and water conservation throughout the region. Regional cooperation on water already has a strong foundation in the 1960 Pakistan-Indian Indus River Treaty.

Paradoxical Crises: The Case of China

China is plagued by two paradoxical water crises—northern China suffers from regular drought while floods beleaguer the south. Water scarcity in the Yellow River is symptomatic of a greater problem in northern China, for by 1997 this river—the world's fourth largest—had

in damage. The Chinese state media reported that in June 2002 alone flooding in southern China cost of the lives of 205 people. In addition to flooding disasters, southern waters are severely polluted and, like the verse from "The Rhyme of the Ancient Mariner," residents in this area of China, though surrounded by vast amounts of water, are nonetheless left in a similar situation as the north, "ne any drop to drink." For instance, the rivers and lakes in the Pearl River Delta, though home to 13 percent of China's water resources, contain high levels of polluted, unusable water. Ma Jun noted that multibillion-dollar cleaning efforts in the south have failed, making clear that pollution is a "nightmare that could haunt [southern China] for years."

According to Ma Jun, the agricultural sector in China suffers the most from the water crises in China. With China's economic future resting in the hands of urban entrepreneurs, the government has maintained a policy of guaranteeing water supply to urbanites first, industry second, and agriculture a distant third. Ma Jun recounted a particularly disheartening conversation with a Beijing official who was asked how the city could guarantee water supply to the 2008 Olympic Games—the official assuredly answered that they would simply cut off the supply to suburban farmers. In addition to being a low priority for water allocation, farmers also have suffered severe weather-related problems; nearly 20 to 25 percent of farmland in China faces some kind of drought, while one-seventh of all irrigated land does not receive any water. As a consequence, China's agricultural sector posts a loss of 20 million tons of crop yields annually.

While agriculture bears the brunt of the water problems in China, Ma Jun suggested that it is also the primary cause for the crises. In the last half century, water consumption of China's agricultural sector has increased by four times to 400 billion cubic meters—nearly 90 percent (360 billion cubic meters) of which has been used for irrigation. A desire to increase nationwide production has resulted in continued exploitation of an already depleted water supply:

- More than 44 million hectares of grassland have made way for farmland in Inner Mongolia, while 40 million have been converted in northeast China—these vast stretches of desert under cultivation have completely tapped out many major rivers and aquifers;
- Soil erosion, resulting from farming, has led to reservoir capacity reduction from sediment; each Chinese farmer contributes approximately 10 tons of sediment to rivers each year; and,
- Nationwide reservoir capacity has dropped 25 percent as a result of sediment.

Cities, of course, are also responsible for the exploitation of water resources. Ma Jun presented Beijing as just one example of the nearly two-thirds of major Chinese cities that suffers major water shortages:

- Over the last 50 years, Beijing's population has jumped from one to ten million, greatly overburdening the water supply service and wastewater service facilities in the city;
- In five decades, annual water consumption has doubled on average; and,
- Beijing's water table drops on average five meters per year.

Ma Jun stated that prioritizing the shift of agricultural water to urban areas reflects the continued emphasis on supply management, which may push the agricultural sector to become more water efficient, but will not solve China's water crises in the long term.

Short-Term Versus Long-Term Solutions

While protection of water quality in major lakes and rivers has become a priority in the two most recent Five-Year Plans (ninth and tenth) and laws to increase water consumption fees have been repeatedly lauded as priorities, the Chinese government continues to rely on water supply management to resolve water shortages. Most notable is the south to north water transfer (*nanshui*

beidiao), a \$15 billion plan designed to transport water from the over-saturated south to the parched north. There is great reluctance, however, among many cities that are supposed to benefit from the plan—northern provinces are unhappy at the prospect of having to pay user fees for the water, in addition to the inevitable cost of cleaning the polluted water sent from the south. Despite the high costs, provincial opposition, and environmental implications associated with this massive water transfer, Ma Jun emphasized that the emergency situation of the north's water shortage gives China few other options. Moreover, he noted that in the north “people have been consuming water, assuming they will be getting it from the south” in the future.



Ma Jun

Nonetheless, observers like Ma Jun have suggested other means of resolving this grave water crisis. At the heart of improving the situation, according to Ma Jun, would be steps to more efficiently use water:

- Raising water prices would help encourage more responsible consumption;
- Costs associated with pollution treatment could be passed along to polluters;
- Clearer water rights and compensation for the use of water should be instituted—if farmers could sell water to factories, they would be more likely to conserve water rather than exploit underground sources; and,
- Like Pakistan, farmers in China could save water by producing less water-needy crops; reducing subsidies of water-needy crops would give farmers the motivation to make this switch. WTO may offer China the opportunity to buy cheaper wheat and rice from the United States, thereby freeing many Chinese farmers to plant more lucrative, less water intensive vegetable and fruit tree crops.

International Support for Water Conservation in China and Pakistan

In the cases of both Pakistan and China, international NGOs and foreign governments have begun to acknowledge the burgeoning water crises and provide assistance. *Sylvana Li*, technical expert for the Research

and Scientific Research Division at the Foreign Agricultural Service within the U.S. Department of Agriculture (USDA), shed some light on the international efforts to help resolve China's water crisis. With the support of the U.S. Environmental Protection Agency, USDA has been engaged in water projects in China since 1996. The inaugural project focused on providing U.S. drinking water technology to two major markets, Shandong and Beijing, followed by data collection after two years to gauge effectiveness. The project's conclusion was marked by a 1999 workshop in Beijing that included 150 participants from China and the United States. Most recently, USDA has embarked on a watershed management project known as the Yellow River Watershed Initiative. With the support of the World Bank, Asian Development Bank, and the Chinese Environmental Protection Foundation, the project aims to address water quality issues, obtaining and analyzing data on wastewater. In terms of international environmental NGOs, such as WWF-China and The Nature Conservancy, have been cooperating with Chinese government agencies and community organizations to implement river basin conservation projects.

Naser Faruqi noted several groups undertaking projects in Pakistan:

- The United Nations Development Programme has provided support to Pakistan's National Environmental Action Plan focusing on dry land management and water conservation;

- The International Water Management Institute has examined economic and health effects of wastewater irrigation in Pakistan;
- The On-Farm Water Managed Irrigation Project is the World Bank's effort to increase agricultural output with responsible water management tactics; and,
- The Asian Development Bank is sponsoring the Punjab Farmer Managed Irrigation Project that focuses on equitable water distribution and irrigation systems.

Dr. Faruqi, while acknowledging the value of these initiatives, feared that they do not sufficiently stress the importance of limiting consumption and changing the culture of water usage in Pakistan. Moreover, Dr. Faruqi contended that, in general, the international organizations performing work in Pakistan are too polarized; organizations either work directly with the government, ignoring the local NGO community and scientific institutions, or tie themselves exclusively to NGOs thereby limiting their reach and effectiveness. While international initiatives may improve water conservation in Pakistan and China, ultimately, both speakers agreed that each country must drastically shift away from prioritizing the increase in water supply and instead emphasize water demand management.

This meeting was cosponsored by the Wilson Center (ECSP's China Environment Forum and the Asia Program) and the U.S. Department of Agriculture.

Hazardous Waste Challenges in Greater China

26 June 2002

*Gao Nianping, Hunan Association of Environmental Protection Industry
Pang Kin-hing, Hong Kong Environmental Protection Department
Wu Tung-jye, Green Formosa Front*

*This meeting featured a study group brought to the United States
by the National Committee on U.S.-China Relations*

Additional Members of Study Group

Yang Yang, Green Stone (Nanjing); Su Qingping, Chengdu Hazardous Waste Transfer Center (Chengdu); Wong Wai-yin (Lawrence), Enviropace Limited (Hong Kong); Yang Kai-hsing, Committee of Soil and Groundwater Remediation Fund (Taipei); Zhang Yinglin, Heilongjiang Environmental Protection Bureau (Harbin)

By Timothy Hildebrandt and Jennifer L. Turner

The people in Mainland China, Hong Kong, and Taiwan face common environmental problems that stem, in part, from rapid economic development. While air and water pollution are the issues receiving the most attention, perhaps one of the most pressing pollution problems in Greater China is one that transcends the present day—hazardous waste. Hazardous waste must be dealt with on three planes, uncovering past pollutants, cleaning present waste, and avoiding future problems. Brought together by the National Committee on United States-China Relations, a group of eight experts intimately involved in hazardous waste issues in Taiwan, Hong Kong, and Mainland China embarked on a study tour of the United States (June 24-July 4) in an effort to observe new methods and lessons learned from their American colleagues. At a 26 June 2002 meeting at the Wilson Center, three of the study group members shared their work experience with hazardous waste while the remaining guests provided a brief synopsis of their views. The study group offered a unique collection of perspectives on hazardous waste issues, for the members were from government, business, and nongovernmental sectors. Although Mainland China, Hong Kong, and Taiwan are at different stages of dealing with hazardous wastes, there appears to be common recognition of the growing dangers of uncontrolled hazardous waste production, transfer, and disposal.

All three areas of Greater China have promoted hazardous waste disposal and tracking legislation. Because of limited land space on Taiwan, incinerators—that often are used to generate energy—have been the predominant disposal method of hazardous waste. While Mainland

China has the land space, most provinces have balked at opening hazardous waste facilities. Hong Kong is unique in Greater China in that the government has made considerable investments into developing integrated waste management facilities. While environmental nongovernmental organizations (NGOs) in Hong Kong do stage protests against environmentally damaging projects, overall Hong Kong green groups tend to have a productive working relationship with the government. Conversely, Taiwan green groups appear much more outspoken and more inclined to act as watchdogs of government and industry hazardous waste disposal regulations and facilities than their Hong Kong or Mainland Chinese counterparts. However, in Mainland China, some NGOs are focusing on educating the public on the dangers of such waste and working to encourage the Chinese State Environmental Protection Administration to permit public access to data on industry waste production and hazardous waste sites. All of the study group members indicated a strong willingness to accept guidance and assistance from countries with greater experience in dealing with hazardous waste problems and all agreed on the importance of increasing education and public awareness of hazardous waste issues.

Mainland China: The Business of Cleaning

Experts dealing with hazardous waste in Mainland China speaking at the meeting were candid about being somewhat behind their Hong Kong and Taiwanese counterparts in the policy and technology spheres. **Gao Nianping**, Secretary General of the Hunan Association of Environmental Protection Industry (affiliated with

the Hunan government Environmental Protection Bureau) provided an introduction to environmental protection industries (EPI), which have become major players in China's efforts to deal with environmental issues generally, and hazardous waste specifically. Chinese EPIs focus on two kinds of service: (1) providing government



Gao Nianping

agencies with consultants and implementation methods, and (2) serving industries with technical assistance and information regarding safe and responsible disposal and eco-friendly business practices. The expertise of Chinese EPIs not only covers a range of hazardous waste issues, but many also specialize in ecological protection and green production.

Similar to other developing and transition economies, in Mainland China the ability to strengthen environmental protection policies and industries is dependent upon continued economic growth. Countering the fears of many local governments that environmental protection will threaten economic development, Mr. Gao argued that EPIs could serve as a "leverage point" for China's economic growth. Indeed, Chinese EPIs have become a cottage industry. In less than a decade, EPIs have ballooned in number to almost 10,000 enterprises nationwide, accounting for well over 40 billion yuan in production. In Hunan province alone, Gao estimated that the 100 enterprises currently producing two billion yuan annually should reach five billion in only three years.

Mr. Gao noted that while many EPIs are doing a great amount of business in China, they only have scratched the surface in improving environmental quality; only ten percent of Chinese cities have sufficient waste treatment facilities, leaving much room for EPIs to provide the service. Since the viability of EPIs is very much dependent upon private financing, the central and local governments in China have been encouraging outside investment. Similar to many other provinces in China, the Hunan government has moved to reduce the taxes for companies engaged in environmental protection services. In Hunan's capital Changsha, for example, city officials have created a 15 square kilometer zone dubbed the "EPI Industrial Park" to attract Chinese and foreign investors.

A hazardous waste EPI created three years ago in

Chengdu illustrates the success of such new industries. **Su Qingping** the General Manager of the Chengdu Hazardous Waste Transfer Center explained that since EPIs such as his are a relatively new form of industry in China, he knew strong support from the local government would be critical for the center to successfully manage hazardous wastes. After two years of striving for governmental backing, the Chengdu city government has become a very robust supporter of the Chengdu Hazardous Waste Transfer Center. For example, the city government helps regulate illegal hazardous waste treatment businesses, offers the center tax exemptions and financial assistance, and most importantly, authorizes the center to deal with the hazardous waste in Chengdu without interfering with its internal decision-making. The combination of government support and strong management independence has made the center highly productive. Currently the center is expanding its work by constructing a large-scale hazardous waste treatment center, which will be complete by 2005. Once complete, this new facility will be able to treat 100,000 of the 140,000 tons of hazardous waste generated annually in Chengdu.

Although Gao and Su stressed the crucial role private enterprises play in dealing with China's hazardous waste problems, they also underscored the importance of education and public awareness, a position echoed by **Yang Yang**, a representative from Green Stone, a Nanjing-based organization that acts as a liaison and information clearinghouse for a network of green student groups and individuals from over 20 universities in Jiangsu province. Green Stone also communicates with foreign NGOs and international foundations for technical and financial support for its network. Since NGOs are relatively new in China and lack experience in advocacy, Chinese environmental groups are rather limited in the work that they can perform. Many Mainland green groups can, however, put their energy into public education to raise awareness of hazardous waste and general conservation issues. Green Stone has been active in such work and also has conducted a survey on pollution of the Yangtze River and helped establish battery disposal treatment centers in Nanjing. According to Ms. Yang, the two greatest challenges for hazardous waste problems in China are: (1) growing consumerism—with higher salaries and a growing population, consumption trends are quickly rising, making the fight against waste an even more difficult task; and (2) lack of information—though the government has a wealth of information and many statistics on hazardous waste producers and trends, the public generally cannot access this information easily.

Taiwan: The Influence of Activism

Unlike their counterparts in Mainland China, Taiwanese NGOs have gone beyond just instituting education campaigns. **Wu Tung-jye** was the speaker from one of Taiwan's most active grassroots environmental NGOs—Green Formosa Front (GFF), which is devoted to advocating social and corporate responsibility through introducing environmentally friendly legislation, holding public hearings, and calling for the punishment of major polluters. Founded in 1997, GFF has focused its energy on four major areas: (1) curbing hazardous waste, (2) supporting seacoast conservation, (3) encouraging pesticide-free agricultural development, and (4)

Remediation Fund. This remediation fund will provide funding to support the clean up of hazardous waste sites, similar to the U.S. Superfund.

Mr. Yang noted that the relationship between NGOs and the Taiwanese government is both antagonistic and cooperative. In the 1980s and early 1990s, NGOs tended to mistrust and question the government's policies and commitment to the environment. However, as Taiwan has become more democratic, the government increasingly has solicited input on new environmental policies through panel discussions and seminars, which include NGO activists.

While NGO participation in dialogues with TEPA

Although Mainland China, Hong Kong, and Taiwan are at different stages of dealing with hazardous wastes, there appears to be common recognition of the growing dangers of uncontrolled hazardous waste production, transfer, and disposal.

promoting community involvement in environmental issues.

While most Taiwanese NGOs limit their work to local issues, GFF undertakes domestic and international activism, striving to make Taiwanese corporations environmentally responsible not just in Taiwan but in other countries as well. Mr. Wu presented slides of GFF's most well-known instance of international activism, the case of the Formosa Plastic Corporation. In 1998, the corporation sent 3,000 tons of mercury-laced toxic waste to Cambodia for disposal. The waste arrived in plastic bags at the Cambodian port city of Sihanoukville at the end of November 1998, misleadingly labeled as "polyester chip" and "cement cake." Within days villagers began to scavenge through the waste taking plastic bags to use as mats and tarps. The subsequent deaths of some people who had come in contact with the waste horrified villagers near the dumping grounds; riots and hysteria quickly broke out, leading to even more fatalities. GFF worked both in Taiwan and Cambodia, making the public aware of the dumping, holding public protests, and helping to bring Formosa Plastic Corporation to court.

The mercury dumping case has had far-reaching effects in Taiwan—it was in fact, according to **Yang Kai-hsing** of the Taiwan Environmental Protection Administration (TEPA), a turning point for environmental policy in Taiwan. In order to more effectively deal with waste problems, TEPA recently created a special department to focus on recycling and established the Committee of Soil and Groundwater

has enabled them to indirectly affect policy, NGOs and community organizations have periodically been successful in pressuring for quick government change in times of crises. For example, after a major oil spill by a Greek tanker off the coast of southern Taiwan, TEPA's response was perceived as slow and inadequate, which sparked protests and negative news reporting. This public pressure triggered some high-level political infighting that led the head administrator of TEPA to step down. As an example of cooperative relations, Mr. Yang explained how NGOs have alerted TEPA to new problems and frequently have offered useful and innovative suggestions. By increasing public participation in the policymaking process, the government is proving that they share the NGO activists' goals to protect Taiwan's environment, which has made the relationship between NGOs and the government less antagonistic.

While his committee's work focuses on cleaning up current hazardous waste sites, Mr. Yang stressed the need to develop more effective means of disposing and reducing industrial and domestic hazardous waste. Mr. Yang highlighted some of the more proactive Taiwanese policies to deal with these issues:

- In July 2002, a major policy initiative came into effect prohibiting many plastic bags and polyethylene products;
- The Taiwanese government is in the early stages of researching ways to turn waste more safely into energy (Taiwan already has 21 incinerators with imported

technologies that can transform the heat into electricity); and,

- To deal with serious problems of illegal dumping of hazardous waste, TEPA has set up a management system in which manufacturers must report (online) the process of manufacturing their products, the

amount of hazardous materials generated during that process, and methods of dealing with the hazardous waste.

Hong Kong: Leading the Charge

Due to its smaller size and strong economy, Hong Kong has the most developed system for dealing with hazardous waste within Greater China. Admittedly, Hong Kong is not burdened with as much hazardous waste as Mainland

China and Taiwan. For example when government officials began to deal with Hong Kong's waste problems in the late 1980s, manufacturing industries, the main contributor of harmful waste, made up only 15 percent of the city's GDP (now, just under 10 percent due to industries moving across the border to Guangdong province). **Pang Kin-hing** of the Hong Kong Environmental Protection Department noted in addition to the decreasing numbers of manufacturers, Hong Kong has no petrol-chemical industries, usually the most prolific of hazardous waste polluters. Nonetheless, because light industrial, commercial, and residential buildings are often close together, waste control issues are very important in Hong Kong.

Hong Kong's approach to dealing with hazardous waste is nearly two decades in the making. The government followed the lead of the United States and European countries in designing a three-pronged approach: (1) promulgating legislation, (2) creating enforcement mechanisms, and (3) constructing treatment facilities. The first step in reducing hazardous waste in Hong Kong was to pass significant, meaningful legislation, the core components of which are:

- Required registration of all chemical waste producers;
- Licensing and training of chemical waste collectors; and,
- Monitoring of waste transportation.

Perhaps even more important than legislation has been enforcement that gives these laws real teeth—after a time-consuming process, the Hong Kong government successfully installed an enforcement team, charged with the task of enforcing proper labeling, storage and discharges regulations. To deal with the newly collected hazardous wastes, it was imperative to build a state-of-the-art treatment facility. Mr. Pang described the highly technical, detailed treatment and monitoring facility to an impressed audience. Commissioned in 1993, the integrated treatment facility employs U.S. Environmental Protection Agency methods for testing and conducts monthly monitoring of dioxin. In an effort to enhance transparency and reassure the public, the facility provides all recent testing figures on the department's Web page (www.info.gov.hk/epd).

While the Hong Kong government owns the centralized hazardous waste processing facility a private company—Enviropace Limited—operates it. **Wong Wai-yin** (Lawrence), a quality assurance and engineering manager at Enviropace, reiterated Mr. Pang's points on the success of Hong Kong's hazardous waste management—even suggesting that the Hong Kong facility might more effectively deal with some of Mainland China's hazardous waste. Enviropace already has been assisting some Mainland Chinese cities with developing hazardous waste processing facilities.

Due to efficient waste management and the decrease in hazardous waste generation in Hong Kong, Mr. Wong claimed that many NGOs have moved away from hazardous waste issues. Instead, Hong Kong NGOs have focused their work on air and water pollution, the truly “hot” issues in the region. While not viewed as a major threat, dealing with hazardous waste in Hong Kong contains some challenges. In particular, Mr. Wong cited the challenge of balancing ecological protection and economic development as the city's economy slows. For example, recently during the reclamation project to build the new Disneyland site at Penny's Bay a significant amount of dioxins that could contaminate the water were found. While the Hong Kong government views this Disney project as key in attracting tourist dollars and stimulating the economy, steps must be taken to contain these wastes. This case exemplifies how the Hong Kong government struggles with maintaining the interests of new businesses while upholding its commitment to reducing hazardous waste.

Future Steps

Because of its booming economy, increasing energy and production demands, and underdeveloped waste



Pang Kin-hing

management capability, Mainland China's future hazardous waste challenges are perhaps the biggest within Greater China. One of the main roadblocks for the Chinese remains the financing of clean technology and treatment of hazardous waste. Gao Nianping explained that while the principle "whoever pollutes, pays" is central to Chinese industrial pollution control policies, admittedly, some enterprises, particularly older industries, in Mainland China have struggled to comply. Mr. Gao emphasized that the Chinese government is not allowing pollution violators to flagrantly evade fines. In Chengdu, for example, the government has shut down 1,369 factories that were out of compliance with pollution emission standards. Mr. Gao assured the audience that state-owned enterprises were not exempt from these regulations.

In Mainland China, Hong Kong, and Taiwan, future hopes for resolving hazardous waste issues are beginning to rest in the laps of the private sector and the international community. In addition to domestic environmental protection industries, Mainland China is setting its sights on foreign assistance. **Zhang Yinglin** of the Heilongjiang Environmental Protection Bureau in Harbin echoed Gao

Nianping's call for international support of China's hazardous waste efforts, including investment and technology transfer. Hong Kong companies like Enviropace have employed their strategies for waste management in Mainland China, including a joint venture with the Tianjin government and operating waste energy sites in Guangzhou. Though well advanced in its efforts to eliminate hazardous waste, the Hong Kong government still is open to improving its waste situation through adopting new technologies from abroad. In Taiwan, the government is also encouraging more private sector investment into waste disposal businesses as a means to stem the illegal dumping of hazardous wastes.



Wu Tung-jye

Karst Regions in Southwest China

Below is a river scene from the karst region in southwest China where the U.S. Geological Survey, Armed Forces Institute of Pathology and the Hoffman Environmental Research Institute at Western Kentucky University are carrying out environmental health initiatives. See "Natural Geologic Conditions, Environmental Challenges, and Human Health in Southwest China" meeting summary on p.180.



Managing Coastal Waters in China

18 September 2002

Jonathan Justi, National Oceanic and Atmospheric Administration

Catriona Glazebrook, Pacific Environment

Baruch Boxer, Resources for the Future (Discussant)

By Timothy Hildebrandt and Jennifer L. Turner

China is a “marine nation” with its future development increasingly dependent upon coastal areas and resources. Today, coastal areas are responsible for 60 percent of China’s annual gross national output. In addition to this crucial economic role, China’s coastal waters boast a rich assortment of marine life. Many species, such as the Yangtze River dolphin, the Chinese white dolphin, and Dugong sea lions, are unique to the country’s coasts and estuaries. However, over fishing, rapid urbanization, and lack of pollution controls on industrial and agricultural activities have degraded river and coastal water quality, which in turn has devastated much of the marine habitat and threatened the marine biodiversity in China. Ultimately, this ecological destruction also poses a serious threat to coastal economic development.

Despite the pollution threats to China’s coasts, there remain many economic and political roadblocks to conservation. Most notably, the integral role of the coasts in China’s economic growth often conflicts with the marine conservation goals. Additionally, responsibility for coastal management has vacillated between provincial and central governments, leaving little opportunity for effective change to be made. This lack of intergovernmental coordination has meant that few laws exist to regulate development and protect biodiversity along the coasts; existing laws flounder from insufficient enforcement. One promising development has been the increasing cooperation of Chinese and international organizations in scientific investigations and policy design to better protect China’s coastal resources. On 18 September 2002, the Wilson Center’s ECSP China Environment Forum hosted a meeting that provided a glimpse into the history of China’s coastal management and a profile of multilateral, bilateral, and nongovernmental initiatives in recent years.

The Ebb and Flow of China’s Coastal Management

Before making the case for integrated coastal management and the U.S. government’s cooperative activities to assist China in protecting marine areas, **Jonathan Justi** of the

National Oceanic and Atmospheric Administration (NOAA) outlined the enormous economic role played by China’s coastal areas:

- China’s coasts are home to approximately 500 million people—roughly 40 percent of the country’s population;
- Over 50 coastal cities have populations over 100,000—several cities have achieved “mega city” status with populations exceeding eight million; and,
- Coastal areas are responsible for \$50 billion (60 percent) of the annual national gross output.

The tremendous growth along China’s coasts, and the subsequent strains placed upon the area’s resources, has driven many Chinese and international organizations, like NOAA, to endorse integrated coastal management (ICM). While ICM is certainly not a new concept, its implementation in China is a great departure from the country’s previous reliance upon centralized resource management strategies.

Historically, China has not ignored the challenges that face its coastal waters. **Baruch Boxer** from Resources for the Future noted that in the 1930s Chinese researchers in Qingdao undertook significant work in the field of oceanography. During the 1960s, marine ecologists in China researched the impacts of poor water quality on fish stocks in Bohai Bay. Furthermore, over the last forty years a great amount of marine science research in China has examined the interconnected coastal and open ocean problems. Despite considerable research efforts to solve China’s coastal problems, institutional roadblocks and the reliance upon centralized management strategies have often impeded scientific efforts to improve coastal policies. Dr. Boxer provided one telling example—in the late 1980s, several leading Chinese academics completed master’s work on marine law in the United States, with the goal of building a special unit in the State Oceanic Administration to develop a coordinated national policy. Yet, when these students returned to undertake the work

for which they were trained, the coastal management authority had switched from the central to the provincial level governments.

An experienced Chinese official reiterated Boxer's contention that conflicts between national and provincial interests have, in the past, made ICM implementation difficult. Following an extensive seven-year study in the 1980s on coastal resources and existing management agencies and institutions, the Chinese central government tried (in the early 1990s) to create a development program similar to ICM. Turf and other disagreements among provinces and national agencies, however, led to the program's premature end. For ICM to be effective there must not only be cooperative relationships between levels of government, but also direct participation of business leaders, analysts, scientists, and public representatives. All of these public and private sector actors must mutually agree and understand the tradeoffs and consequences of ICM. However, without basic cooperation among government agencies and lacking a legal framework for coastal management such stakeholder exchange is not possible in China.

Building a Legal Framework for Coastal Management

Beginning in the mid-1990s, the Chinese government began to create a strategic vision for coastal waters and oceans. Recognizing the faults of a centralized system, vulnerable to institutional changes, the Chinese government began to embrace the tenants of ICM in a 1996 policy document—China's Ocean Agenda 21. This document created an action framework for the protection of maritime resources, elimination of pollution, and the implementation of sustainable development. Jonathan Justi highlighted some of the key provisions of this policy:

- Oceans and coastal areas must be developed sustainably—natural habitats must be preserved;
- China must build up its marine legal system;
- Widespread public participation is crucial in coastal development and protection; and,
- Management of the coasts must be integrated.

Following the promulgation of China's Ocean Agenda 21, one of the first major steps to address China's coastal challenges was legal reform. Baruch Boxer explained that not since China's active participation in the 1950s International Law of the Sea agreement had the Chinese government devoted so much interest to marine law. Today's emphasis on marine law stems from concern for strategic and resource development. The Marine

Environmental Protection Law, updated in 2000, not only addressed issues of pollution and ecological health, but also embraced the fundamentals of integrated management by explicitly outlining responsibilities for central government agencies and local governments to collectively monitor, gather data, report problems, and distribute fines. Perhaps more importantly, according to Justi, on 1 January 2002, the Sea Area Use Law took effect in China. The law, the first of its kind for China, aims to ensure that: (1) sea area use activities are in accord with zoning plans, (2) all users of the sea area are formally licensed, and (3) resources are public property, thus users must submit user fees. Additionally, the law allows for a fine regime to discourage misuse and abuse of sea areas.



Jonathan Justi

Multilateral Work

Beginning in the mid-1990s assistance of multilateral organizations began to help Chinese agencies put the implementation of ICM to the test. Jonathan Justi offered several examples of projects that have sought to apply ICM in China and demonstrate the viability of preserving coastal biodiversity without threatening economic growth:

- Maritime Pollution Prevention and Control Project in South Asian Maritime Space (1994)—supported by the UN Development Programme (UNDP), Global Environment Facility (GEF), and International Maritime Organization (IMO), this project sought to test the integrated management coordination in Xiamen. The international and Chinese project partners developed environmental profiles and management plans, established an interagency planning process, and worked to implement and enforce coastal management and monitoring programs. The project relocated shrimp pens away from major shipping lanes, developed eco-tourism opportunities, and removed aging causeways.
- Sustainable Coastal Resources Development Project (1998)—a \$100 million World Bank loan, along with matching funds from the Chinese government, sought to promote sustainable coastal resources, reduce pressure on fishery resources, and improve water quality

in the coastal regions of Fujian, Jiangsu, Shandong, and Liaoning provinces.

- Capacity Building for ICM in Northern South China Sea (1997)—a cooperative effort between the Chinese government and UNDP targeted sites in Hainan, Guangxi and Guangdong provinces to initiate extensive ICM initiatives. Among the project's goals was to consult all stakeholders and raise public awareness

Initiative; the project's primary aim is the local application of ICM, as well as education, outreach, habitat restoration, and protection activities. NOAA has offered its extensive experience with GIS in an effort to provide improved data management in coastal management. While the NOAA-SOA relationship has proved useful for both sides, Justi observed that an expansion of the work is constrained by an insufficient budget on the U.S. side.

China is a major player on the world fish market, producing 70 percent of farmed fish. China's aquaculture is, essentially, feeding much of the world.

about ICM, create environmental profiles of the coastal areas, implement strategic management plans, review relevant laws, and establish an ICM center.

While these multilateral projects have stimulated more policy dialogue on ICM in China, Justi noted that the above projects have not been complete success stories. ICM programs in China, for instance, still rarely address overbuilding in new development zones; in some instances, production growth was one of the main criteria for project success.

After evaluating these three major multilateral ICM test projects, Jonathan Justi argued that to improve future ICM projects Chinese initiatives need to make significant progress in several areas—expand training, provide sufficient resources for monthly coastal water monitoring, and expand the utilization of international technical advice. Some headway has been made in the development of experts in resource management issues. For example, since 1997, Xiamen University has been home to the Xiamen International Training Center for Coastal Sustainable Development. This center provides training and study tours and serves as a forum for the marriage of marine science and marine management.

U.S. ICM Bilateral Work in China

Since the late 1990s, NOAA has sponsored a significant number, albeit relatively small-scale, ICM-related exchanges. NOAA ventured into a bilateral ICM program with China in 1997 and, unlike many of other U.S. government bilateral projects in China, has made a long-term commitment to its partner agency (the State Oceanic Administration, SOA). Integral to NOAA's involvement in China's ICM efforts is an attention to marine monitoring. The most significant project resulting from the cooperation, according to Justi, is the Beibu Gulf

The Third Way? NGO's and China's Coastal Management

Although multilateral and bilateral projects all have emphasized effective integrated coastal management, their motivations, however, differ. The driving force of the Chinese government, for instance, is to preserve for future exploitation the resources that have been key to recent economic windfalls. Some NGOs, however, are largely drawn to the threat that unchecked growth has upon marine "treasures." **Catriona Glazebrook** of Pacific Environment cited the many marine species, unique to China, that have suffered from industrialization, poaching, and over fishing; among others, the Chinese white dolphin, Yangtze River dolphin and the Dugong sea lion are facing extinction.

Glazebrook noted that, as grave as these problems are, NGOs, like all other groups doing coastal management work in China, need to sufficiently answer the question, "why should we care?" For Glazebrook and Pacific Environment, the reasons are numerous, simple, and striking. For example, China is a major player on the world fish market, producing 70 percent of farmed fish. China's aquaculture is, essentially, feeding much of the world. Research has shown, however, that over fishing has resulted in an annual catch decline of 800 million pounds. Unless corrected, the world's fish stocks will be significantly depleted. Overfishing by Chinese ships, as well as growing transboundary water pollution from China, are two issues that fuel political tensions in Northeast Asia.

While the Chinese government has established five national protected coastal areas (one each for spotted seals, Dugong sea lions, white dolphins, turtles, Yangtze River dolphins) and many local governments have created smaller reserves, all suffer from lack of funding. Despite

the enormity of China's coastal problems and weak coastal reserves, Catriona Glazebrook is generally hopeful. She noted that the Chinese government has made some inroads: China joined the International Whaling Commission, adopted a zero percent increase on take of fish, and issued a regulation on driftnet fishing. However, the Chinese central government has proposed other somewhat dubious conservation solutions, such as species relocation, which tends to carry a heavy cost and is a temporary bandage, ignoring the problems that have made species endangered.

In her talk, Glazebrook explained that while the capacity of Chinese NGOs has grown tremendously over the last five years, groups devoted solely to marine issues are few. Consequently, there are many opportunities for international NGOs to provide resources and expertise to Chinese scientists to promote marine conservation activism. At the center of Pacific Environment's efforts in China is the notion that many great potential environmental leaders exist outside the government, but they are unable to undertake marine conservation work due to a lack of funding. Pacific Environment has resolved to directly help those individuals, namely scientists, through re-granting funds. Glazebrook noted one recent initiative: an influential scientist will receive \$16,000 to conduct research on the viability of creating a protected habitat in the Dugong coastal reserve on Hainan Island. It is Pacific Environment's hope that by encouraging those on the cutting edge of coastal management research, expertise will grow and invigorate the search for balancing sustainable development and coastal management.

Lessons Learned, Opportunities Plenty

The Chinese government is, undoubtedly, aware of the problems that face the country's coastal waters. Indeed, necessary steps to promote ICM and preserve China's

coasts have been taken: A new management regime is beginning to emerge, licensing fees for coastal development are collected, a legal framework for coastal protection now exists, and institutional (domestic and international) partnerships crucial for ICM have grown in number. But, the speed at which these changes are made, and take hold, may be too slow to sufficiently solve the coastal problems. Moreover, as Justi noted, it is clear that while "Coastal Environmental Stewardship" is a national priority, China faces even greater political, social, and economic issues that demand the Chinese leadership's attention.

Although China is facing many development problems on a level unknown to most of the world, the nature of the challenges to their coastal waters are no different than many others. There is indeed great potential for China to learn from the experience of other countries. Justi suggested that future U.S. work with China could include: sea area use management, law enforcement, conservation policies and regulations, and market access. Speakers and audience members alike concluded that while the U.S. government, for instance, has embarked on projects, even greater participation could provide great benefits to China's quest for ICM. Catriona Glazebrook emphasized how challenges inherently provide opportunities and concurred with Justi's comment that international organizations and agencies, like NOAA, can be a "catalyst for making [ICM in China] work."



Catriona Glazebrook

Green Olympic Roundtable: Insights for Beijing 2008

8 October 2002

Yu Xiaoxuan, Environmental Activity Department, Beijing Organizing Committee

Tom Price, Environmental Advisory Committee, 2002 Olympic Games

Mark Jordan, Bay Area Sports Organizing Committee

Tanmay Tathagat, International Institute for Energy Conservation

By Timothy Hildebrandt and Jennifer L. Turner

On 18 July 2001, outgoing International Olympic Committee (IOC) president, Juan Antonio Samaranch, declared in Moscow, “The games of the 29th Olympiad in 2008 are awarded to the city of Beijing.” This announcement sparked celebrations with fireworks and *baijiu* in Beijing and other cities throughout China. Most Chinese citizens believed the most difficult task in China’s Olympic journey was to successfully convince the IOC and the international community that Beijing could host Olympic Games that would rival Sydney or Atlanta. Yet, those more closely involved in the planning for the 2008 Summer Games, acknowledge the even greater tasks before Beijing.

In order to secure the Games over other serious contenders like Paris and Toronto, Beijing needed to construct a bid that fulfilled or surpassed all the requirements set forth by the IOC. Taking a page out of Sydney’s bid, Beijing 2008 paid particular attention to the newly created “third leg” of the Olympic movement—the environment. The Beijing bid committee created a comprehensive environmental plan applicable to all elements of the Games: venue construction, transportation, waste management, and pollution control.

At an 8 October 2002 roundtable meeting at the Wilson Center—cosponsored by the ECSP China Environment Forum and the International Institute for Energy Conservation (IIEC)—Yu Xiaoxuan, deputy director of the Environmental Activity Department for the Beijing Organizing Committee, outlined the achievements already made and challenges the city still faces as it attempts to fulfill the environmental commitments for the Olympics. Yu was joined by a unique group of individuals with Olympic experience from past and potentially future Games who offered advice for Beijing’s Green Games. Tom Price, former chairman of the Environmental Advisory Committee to the 2002 Olympic Winter Games, profiled the successes and failures of Salt Lake City’s efforts at hosting a Green

Olympics. Mark Jordan, a member of the executive board of the Bay Area Sports Organizing Committee’s 2012 Olympic bid, discussed the unique environmental plans that San Francisco hoped would help it win the right to host the 2012 Games. In light of the massive infrastructure projects necessary for the Beijing Olympic Games, Tanmay Tathagat, senior energy efficiency engineer at IIEC, discussed the ways by which Beijing might construct green buildings and venues. Beijing’s journey to host successful Green Olympic Games has just begun and the task is daunting. However, presenters and audience members alike concluded that the environmental movement of the Games deserves great attention, for Olympic Games have the capacity to affect real change. In the end, it is the broader legacy of the Games, not the three-week event alone, which will have the most lasting impact on the environment, locally and globally.

Beijing: The Problems

Beijing’s efforts to ensure that their version of the Summer Games are truly green are made all the more difficult by the city’s preexisting environmental problems. When presenting their bid to the IOC, the Beijing committee was surprisingly honest about the environmental challenges facing the city; they went to great lengths, however, to emphasize their commitment to resolving the current problems. Similarly, Yu Xiaoxuan was very candid in his assessment of the environmental situation in Beijing today and he provided examples of the city’s air quality challenges:

- Sulfur dioxide concentration degradation is considerably higher than the national average of 60 micrograms per cubic meter (mcg/m³), symptomatic of Beijing’s dependence on coal for heating;
- Nitrous oxide levels are well over 100 mcg/m³, growing significantly over the last decade along with increased numbers of private vehicles on Beijing roads;

- Perhaps most worrisome, the city's total suspended particle concentration, linked directly to the desertification of northeast China, is nearly 80 percent greater than the national average of 200 mcg/m³.

Before even being awarded the 29th Olympic Games, the Beijing city government began efforts to address some of the causes of air pollution, most notably heating sources and vehicle emissions. Since 1998, according to Yu, the city successfully converted 44,000 small coal facilities to natural gas and 8,600 larger (and more polluting) coal boilers to cleaner burning fuel. Natural gas usage increased sevenfold from 1998 to 2002—the amount is expected to double again by the start of the Games in 2008. In those instances where coal is still used for heating, higher quality coal has been employed to diminish sulfur dioxide. Showing Beijing's devotion to tackling vehicle emissions, Yu touted the city's 1,900 natural gas buses ("nearly double the [number of buses] in Los Angeles," he interjected), the banning of leaded gasoline, and the 90 percent passing rate of random roadside emissions tests. Additionally, Beijing has adopted the Euro II standard for new vehicle emissions and retrofitting of 190,000 older vehicles—by 2005, Euro III standards will be in place. Though pollution levels are still high, Yu expects these efforts and others will assure cleaner air in time for the Summer Games. Massive infrastructure projects involved in the preparation for the 2008 Games have the potential to cause new environmental problems for Beijing. Of the 37 sports venues needed, Beijing needs to build 19 new structures and to expand 13; the city will construct 59 training venues, a media village, news center and 470,000 square kilometer Olympic Village. In all, the total area of Olympic-related construction is 2,160,000 square kilometers, over a tenth Beijing's total construction area.

Beijing: The Plan

Beijing's environmental planning is entering its final stages. The Beijing Olympic Committee is vulnerable to problems faced by all past Olympic environmental efforts; this new "third leg" of the Olympic Games leaves great room for interpretation. For the 1998 Winter Games in Nagano, Japan, the visuals of Green Games were emphasized at the expense of environmental degradation: To make for better television, trees were cut and placed in PVC piping near venues in Nagano that needed a little more green. The burden, therefore, of deeming what is "green" and environmentally sound for the 2008 Games falls to individuals like Yu Xiaoyuan. To this end, Yu and his colleagues have created numerous study groups tasked

to create environmental and energy efficiency standards for the Games. These standards are expected to be firmly established by the end of October 2002 and will be used in vendor and builder selection early in 2003. The Beijing Environmental Activity Department also will hold a series of meetings in which builders can get together with suppliers to assure that environmental requirements and standards are known to all parties involved.

The environmental initiatives that Beijing is prioritizing are energy conservation, water protection, construction materials, landscaping, solid waste management, and cultural relic protection. Yu highlighted the work of three study groups working on Olympic infrastructure design:

Energy: The Beijing Polytechnic University was chosen to design standards for energy conservation in Beijing 2008 infrastructure projects. The study group created extensive energy guidelines. Energy consumption per square unit will be closely regulated for illumination, cooling and heating in sports venues, athlete housing, and all commercial public facilities. Moreover, the group made recommendations on an often-ignored drain on energy in China—insulation in floor, ceilings, doors, and windows. The group also suggested clean energy sources such as natural gas for electricity, geothermal heating in the Olympic Village, and solar energy for illumination and hot water.

Water: The Beijing Environmental Conservation Bureau tackled water conservation and water use efficiency. The showcase of the Beijing bid, dubbed the "Olympic Green," poses a great challenge for those entrusted with saving water in a city that suffers from grave water shortages. In addition to the tremendous amount of water needed for scores of new trees and vast lawn space, a new artificial lake, central to the "Olympic Green," will put great strains on the city's already over-tapped resources. The Environmental Conservation Bureau stressed the necessity to use recycled water in lieu of fresh water.



Yu Xiaoxuan

Additional recommendations include the reduction of phosphorus and nitrogen levels in water citywide.

Building materials and equipment: Addressing another under appreciated environmental challenge, the Beijing Building Material Institute was entrusted with the task of researching the potential of new, environmentally- and health-friendly building materials in the renovations and new construction. The Institute divided thousands of materials into ten categories, in which each was ranked using European environmental building standards—

With the involvement of an independent Environmental Advisory Committee in the Salt Lake City Games, many environmental concerns were voiced and successfully addressed. The committee was able to secure the broad use of natural gas buses for transportation. Acknowledging that venues would far outlast the three weeks of the Winter Games, renewable materials were used throughout venue construction. Somewhat unexpectedly, the Committee was able to involve private businesses in the effort as well. For example, the hotel and hospitality community committed to their own

Beijing's efforts to ensure that their version of the Summer Games are truly green are made all the more difficult by the city's preexisting environmental problems.

researchers recommended that builders restrict their materials to only those ranked in the top ten of each category.

Mr. Yu acknowledged that, while their planning has been comprehensive, the Environmental Activity Department is in the earliest of stages of executing truly Green Games. Indeed, Beijing now has the basic strategy, but, in Yu's words, the planning is most certainly not ready to be a "dish that we can put on the table." With the aim of assisting Beijing officials along in their preparation to finish "cooking the dish," Tom Price and Mark Jordan offered their own suggestions to help Beijing reach its 2008 environmental goals.

Salt Lake City: Advice from the Past

Salt Lake City's 2002 Winter Games could be seen as unusually successful. Economically, the city pulled off a feat not common in the Olympic world—not only did the Olympic Committee pay all of its bills, but also closed the Games with a 100 million dollar profit. From an environmental perspective, the Salt Lake City Games had much to be proud of; the venue recovery plan, bringing native vegetation and species back into former venues, has already been a great success. There were, of course, many failures as well. Some of the environmental plans that were laid out before the bid were not completed. After the bid scandal, the "third leg" took a back seat to the simpler goal of getting the stalled games off the ground. It was these failures, often characterized as "missed opportunities," from which Beijing has the most to learn. Moreover, Tom Price emphasized how seizing environmental protection opportunities will create a lasting impact well beyond the three weeks of the Games.

environmental program, including: (1) taking used mattresses to homeless shelters and community groups rather than the landfill, and (2) creating a hotel policy to limit the needless washing of towels that resulted in massive water savings. Despite such successes, observers contend that there were countless missed opportunities. Tom Price noted some opportunities that Beijing could take advantage of in 2008 to promote its green agenda:

Utilize the vast news media presence: Media might well be the unofficial "fourth leg" of the Olympic movement. This integral and very influential force should be used to benefit the environmental movement in Beijing. "17,000 journalists are stuck in a building, desperate for a story to tell," remarked Price. Salt Lake City, unfortunately, failed to bring its environmental success stories to these eager journalists. Price noted that the local event is simply "scenery for an international event"—for most of the world the Olympics are solely a television event. In order to reach the broadest audience, it is crucial that Beijing's Environmental Activity Department quickly build a relationship with the Game's official television broadcasters, like NBC, so that their environmental programs may be seen worldwide and thus have a far greater impact.

Form partnerships with major sponsors: Olympic Games have increasingly become a forum for sponsors to show off their latest products. This commercialization of the Games can be used to promote environmental protection—green projects and sustainable development initiatives might be more widely adopted with the help of major Olympic sponsors. Because of its bid scandal,

Salt Lake City was unable to secure a great deal of sponsor assistance for environmental initiatives—however, all green projects pitched to sponsors received full funding. Tom Price suggested that Beijing is in a perfect situation to benefit from similar relationships in which they could “get someone else to pay for something [Beijing] wanted to do anyway.”

Capture the spectators’ attention: Price suggested that the Beijing Game’s environmental efforts could be the “waiting story.” For the television spectator, the Games are marked by commercials; for the live spectator, waiting in lines for food to be served, events to begin, and buses to arrive. In Salt Lake City, like most host cities, spectators spent more time getting to and from events than any other activity throughout the Games—yet, they missed the opportunity to capture this audience and promote their environmental message. Beijing could use buses as “rolling billboards” to tell their environmental story to several hundred thousand spectators (and millions of residents) every day.

Protect your position: Salt Lake City’s environmental initiatives were, in part, a victim of the bid scandal—achieving Green Games was not a priority with the prospect of having no Olympics at all. However, environmental concerns were also a victim of organization. For the 2002 games, environment was not a separate entity within the greater Olympic Committee—instead, it was under the direction of “venues.”

Builders were not obligated to listen the suggestions of environmental staff; who were viewed as organizational subordinates. Consequently, environmental concerns often were shelved in the interest of speedy and cost-effective construction. To preserve their vision, protect funding, and produce truly meaningful projects, Price suggested that the Beijing Olympic Environmental Activity Department attempt to secure equal status with all other groups within the organizing committee.

Take advantage of the experts: The enormity of the Olympic Games is difficult to conceptualize. Tom Price opined “you can’t imagine something of that scale....there is no way you can prepare for Olympics other than actually doing it.” Moreover, the Olympic committee can not very well run successful Games without outside input. Beijing must take advantage of energy and environmental experts and nongovernmental organizations (NGOs) whose level of environmental expertise far exceeds that of the Olympic Committee.

San Francisco: Insights from the Future

San Francisco is well known for its civic-minded and environmentally aware citizenry. The IOC’s recent devotion to the environment made San Francisco a potentially strong contender for the 2012 Summer Games. Mark Jordan maintained that a fundamental commitment to environmental ideals, and not outside pressure, is the best way to achieve truly Green Games. In Lillehammer, for example, the Norwegians achieved high environmental standards purely on their own initiative, before the IOC created the environmental leg. Environmental commitments are difficult to uphold, in great part, because the Games are a multibillion-dollar business with a plethora of competing interests. Therefore, without a firm commitment by those in power, environmental concerns are easily pushed out of the way as sometimes occurred in Salt Lake City.

San Francisco’s keen interest in the environment were made all the more substantive by a detailed set of commitments and standards in preparation for possible Olympic Games. Using frameworks like ISO 14001 (a certification standard for environmental management planning) and Agenda 21 (the UN action plan for sustainable development), San Francisco’s bid committee aimed not only to execute the most environmentally friendly Games in history but also to create an adaptable model for future Olympics. Although the U.S. Olympic Committee did not choose its 2012 competitor, the city’s unique environmental planning offers some guidance for Beijing.

Jordan, like Price, explained that environmental concerns are usually seen as an “add-on” and often are lost in the organizational hierarchy of the Olympic Games. Indeed, the organization of the Beijing Games is potentially problematic for a strong environmental voice. The Beijing Olympic Organizing Committee is headed by three officers: The President of the committee is Qi Liu (Mayor of Beijing); the Executive President is Weimin Yuan (Director of State Sport General Administration); and the Executive Vice-President is Liu Jingmin (Vice Mayor of Beijing, who has the infrastructure portfolio covering Beijing’s environment and transportation). These three officers oversee 14 departments; ranked seventh and created in July 2002 the Environmental Activities Department contains 4 individuals, but has plans to increase its staff to 14.

San Francisco’s Olympic Committee organizational structure differed from Beijing’s (and those in previous Olympics) in that it prioritized environmental issues. Reminiscent of a traditional business structure, San Francisco’s Olympic bid committee was headed by a

CEO, but followed closely by three officers, all of equal status: Chief Financial Officer, Chief Operations Officer, and Chief Environmental Officer. This structure aimed to ensure that the environmental representatives are not pushed into a sub-ordinate role as occurred in Salt Lake City.

To create a lasting environmental legacy for Olympic Games, according to Mark Jordan,



Tom Price

a city must not ignore the business of the Games. The thousands of vendors and suppliers must be well aware of the Games' environmental commitments and standards. Jordan, encouraged by Beijing's plan to communicate its own standards to suppliers and vendors, reiterated the importance of paying attention to supply chain management and suggested that suppliers and vendors should: (1) be educated in environmental systems management, and (2) be ISO 14001 certified. Moreover, the city's Olympic Committee should be expected to audit all suppliers and vendors to guarantee full compliance. Environmental standards for construction, materials, and energy generation for Olympic facilities are strengthened when standards are well publicized and the compliance process transparent, "We don't want ISO light," remarked Jordan. The ultimate goal of promoting strong standards is to show the world that addressing environmental issues early in the planning process will result in a truly sustainable Olympic development plan.

As Beijing begins to choose its vendors, Jordan suggested the city Olympic planning committee create an arena in which smaller contractors can participate. Certainly large corporations are needed because of the numerous massive infrastructure projects; yet, innovative thinkers and cutting edge environmental technologies are often found in smaller corporations. Uncovering these "hidden treasures" is another way Beijing can put its mark on the state of the global environment and future Olympic Games.

Education is an important element for preserving the legacy of the Games. Jordan agreed that it is important to engage in outreach—using sports is a terrific means by which children can begin to think about the

environment. The San Francisco bid also outlined plans to educate the athletes in environmental issues. It is one challenge, Jordan noted, to create an Olympic Village with green buildings; it is another to teach the athletes how to interact with the housing. The 2012 plans called for issuing each village housing unit a detailed manual addressing issues from "what detergent is the most green?" to "what plants are most appropriate for the indoor environment?"

What Makes a Building Green?

Aside from the legacy, the buildings constructed for an Olympic Games are perhaps the longest lasting reminder of the three-week event. San Francisco's attention to green standards went beyond its efforts to host the Olympics in 2012: Working with the U.S. Green Buildings Council, the bid committee explored the use of hydrogen energy, natural gas, and solar power, in addition to examining the prospect of making the Olympic Village a net zero consumer of fresh water. Indeed, green buildings are one of the most prominent physical examples of environmental ideals in action, claimed Tanmay Thathagat.

Just like all other standards for measuring the environmental impact of the Games, gauging the "greenness" of buildings is no simple task. Thathagat profiled the two most widely used whole building assessments: (1) Building Research Establishment Environmental Assessment Method (BREEAM), used primarily in the United Kingdom, analyzes building materials and the means by which the building is constructed. The assessment also takes into account the building's operation and management, such as waste collection, water usage, heating, and cooling; (2) Leadership in Energy and Environmental Design (LEED), administered by the U.S. Green Buildings Council, divides its assessment into five major sections: sustainable sites, water efficiency, energy and atmosphere, materials, and indoor environmental air quality. Buildings are issued points for meeting each category standard. While a total of 69 points are possible, a minimum of 26 is necessary for certification—"platinum level" (the goal for San Francisco's Olympic village) demands 52 points, a standard rarely attained.

Beijing could use these types of assessments to help attain legitimacy for its greening efforts in the eyes of the international community, Thathagat noted. As Beijing is just completing its planning process, it is not too late to implement various green building strategies:

- *Water efficiency:* Waterless urinals and rainwater

collection can help eliminate dependence upon municipal water sources;

- *Material efficiency:* Retrofitting older buildings can help save on materials and using local and regional materials can be cost effective; and,
- *Energy efficiency:* Building design and orientation—creating a cross-shaped building rather than a square building can promote significant energy savings.

Thathagat reminded the audience that China has a long history of “smart design” from which they can draw upon to build modern buildings; natural ventilation and lighting used in ancient Chinese buildings could find a

prominent role in green Olympic structures. In effect, the legacies of the past and the present can potentially meet in 2008.

Yu Xiaoyuan gracefully received the suggestions provided for Beijing’s 2008 Olympic. His presence at the meeting alone suggested a desire to seek out the advice of those who have been in a position similar to his own. Indeed, Beijing has a great deal of work ahead to make its plans a reality—but they have certainly made progress in creating a workable framework for a green Olympics. Moreover, their insights on forging a legacy, primarily through stressing environmental education, are in step with other successful Olympic environmental efforts.

Woodrow Wilson Center 2004-2005 Fellowships

The Woodrow Wilson International Center for Scholars is accepting applications for its 2004-2005 Fellowship competition.

The Center awards academic-year residential fellowships to individuals from any country with outstanding project proposals on national and/or international issues. Projects should have relevance to the world of public policy or should provide the historical and/or cultural framework to illumine policy issues of contemporary importance. Fellows are provided stipends that include round-trip travel, private offices, access to the Library of Congress, Windows-based personal computers, and research assistants.

The application deadline is October 1, 2003. For more information call 202/691-4170 or email fellowships@wwic.si.edu. The application can also be downloaded from the Wilson Center’s Web site at <http://www.wilsoncenter.org>

Environmental Journalism in China

18 October 2002

Sun Yanjun, Tianjin Public Radio

James Detjen, Knight Center for Environmental Journalism, Michigan State University

By Timothy Hildebrandt and Jennifer L. Turner

The East Asian economic boom in the 1980s generated greater wealth and prosperity, but at a cost of creating serious environmental problems. Air, water, and land degradation were not only catalysts for government and citizen action, but also for news media activism in the region. In the 1980s and into the 1990s, environmental journalism began taking root across East Asia—a great number of weekly papers devoted solely to environmental issues sprang up in South Korea; “green” television programs made their way onto the Hong Kong airwaves; in Taiwan some journalists tried to help disseminate citizen and green group grievances against toxic industries. Today, journalists in mainland China are beginning to journey down a similar path of using the news media to address environmental concerns. While news media organizations in China face limits on the breadth and depth of their reporting, environmental journalists have enjoyed considerable freedom.

Continuing the work begun in 2001 at the Green NGO and Environmental Journalist Forum held in Hong Kong, the Wilson Center’s China Environment Forum hosted an 18 October 2002 meeting that examined the state of environmental journalism in China today. **Sun Yanjun** offered a unique perspective on the topic as the creator of the first radio program devoted solely to environmental issues at Tianjin Public Radio. **Jim Detjen**, a prominent U.S. environmental journalist at the Knight Center for Environmental Journalism, shared insights from his experience lecturing to students of journalism and meeting with media outlets in China as a Fulbright scholar in 2002. Both speakers acknowledged the potential for environmental journalism to take an even more prominent role within the Chinese news media and the positive effect such journalists could have on furthering environmental protection. Nonetheless, inexperienced reporters, limited access to reliable scientific information, and a lack of advertising are some roadblocks to a more widespread environmental media revolution in China.

Land Ho! Discovering Possibilities and Uncovering Challenges

Sun Yanjun’s career as an environmental journalist is perhaps a result of Chinese government policy. While the economic reforms in China have increased independent journalism, the Chinese government prefers to use the news media to further policy directives. Since the Chinese leadership has placed environmental concerns high on the national policy agenda in recent years (as well as promising to put on “green Olympics” in 2008), the news media has been given more freedom than usual to report on environmental issues. Certainly, the government has taken steps of its own to promote environmental awareness; the State Environmental Protection Administration (SEPA) and the State Forestry Bureau have been publishing environmental newspapers for 17 and 15 years, respectively. These papers, however, are mainly circulated within government agencies and not to the general public. Journalists and reporters, such as Sun Yanjun, have begun using television, radio, popular newspapers, and the Internet to help promote a green ethic and raise green consciousness amidst a rapidly growing economy and an environment in crisis.

Despite the government’s enthusiasm for promoting a greener national agenda, environmental journalism in China is not without obstacles. Sun Yanjun outlined numerous impediments to strengthening environmental journalism in China: (1) uninformed and inexperienced reporters often provide audiences with inaccurate information; (2) press coverage of environmental issues is spotty, offering a great deal of attention to the environment during times of major crises (e.g., 1998 Yangtze River floods, spring dust storms) and events (e.g., National Party Congress, 2008 Olympic bid) but very little interest when such events have ended; (3) environmental-related publications are often either too technical, resulting in inaccessible information, or too broad, with little substantive information from which to learn; (4) top-down, concentrated efforts that mobilize

many reporters to discuss one specific environmental issue results in redundant reporting; and perhaps most problematic, (5) editors and producers consider environmental reporting as part of the “charity sector.” In other words, these green stories attract little advertising, so news media organizations view such reporting as money-losing endeavors.

These shortcomings offered a true challenge for Sun Yanjun as she began her unique brand of environmental education. Upon learning that not one of Tianjin’s radio stations covered environmental issues, Sun recalled feeling “like [she] was Columbus discovering America.” Although she lacked environmental background and faced unenthusiastic producers, her intense belief in media’s power of influence drove her to begin Tianjin’s first environmental-themed radio program; Sun believed that “if mass media is the first to take action...the public will follow in its footsteps.” “Green Global Village” started with the ambitious charge of promoting public awareness and participation in environmental protection, as well as monitoring environmental problems and exposing illegal activities. While Sun has been plagued by worries of continued funding for her work, the public has indeed enthusiastically followed her programming.

As evidence of the power that environmental journalists can wield, Sun recalled an incident that was raised on her radio program’s “environmental monitoring hotline.” Residents in a Tianjin neighborhood, upset by noise pollution from a nearby boiler and the owner’s plans for expansion, contacted her Global Green Village radio program for assistance. For three months, Sun devoted time both on and off air to investigate the grievances and to help the disputants solve the conflict. Sun used her program to create a unique forum for discussion and she invited officials and experts from all relevant sectors: SEPA officials listened to the concerns of both parties, lawyers consulted on the possibility of civil litigation, and environmental scientists discussed the logistics of environmental impact assessments. The issue was opened to the audience as well, which led to lively debates on related topics, from individual environmental rights to corporate responsibility. As a result of Global Green Village’s “words combined with action,” the boiler company conducted an environmental assessment, abandoned its expansion plans, and paid damage compensation to the residents.

While Sun’s experience exemplifies a highly effective role the Chinese media can play in furthering environmental causes, Sun felt that educating the disputing parties and the larger listening community was a victory greater than the actual resolution of the conflict.

In addition to promoting environmental dialogues on the radio, Sun has joined with some people in her listening community to form Tianjin’s first environmental nongovernmental organization (NGO)—Friends of Green. This environmental education NGO is perhaps the best sign, according to Sun, that environmental awareness has grown in Tianjin.

Although she has had success, Sun’s environmental reporting has been more or less self-taught and she is hungry to improve her reporting. Sun stated that she and other Chinese journalists need to be better informed and could benefit from help and guidance from international colleagues. Such assistance will be crucial for China to professionalize environmental journalism, which could then more effectively educate the public and monitor government policy implementation.

Quiet Revolution: Environmental Journalism’s Presence in Popular Media

Sun Yanjun’s vision for international exchange and cooperation with environmental journalists has, in part, already begun in China. During the 2001-2002 academic year, Jim Detjen brought his extensive journalism experience to Tianjin’s Nankai University as a Fulbright scholar. Among his activities, Detjen instructed a course on environmental journalism, one of the first in Mainland China. Drawing on his experience in lecturing on environmental journalism at universities and conducting workshops with news outlets across China, Detjen echoed the analysis of Sun: though still a small presence and facing many challenges, environmental journalism is growing rapidly throughout China. This growth in environmental journalism is tied in part to the increase in journalism programs within Chinese universities. Detjen remarked that within these newly created university programs the faculty and students have been enthusiastic about western styles of news reporting and specialties such as environmental journalism. For the past five years, Qinghua University’s Dupont Environment Awards has awarded \$400 prizes for excellence in environmental journalism. These awards illustrate the academic community’s commitment to environmental journalism.

Detjen suggested that environmental journalism is part of a “quiet revolution” in the Chinese news media. China’s expanding economy has created an environment that is very hospitable to some nontraditional news reporting. China’s rising middle class has indeed begun to demand more variety in news—e.g., larger paychecks have made satellite dishes, though illegal, a common sight in urban and rural areas alike; widespread use of the Internet also suggests an increased thirst for information.

While Detjen recognized the difficulty of attracting advertising dollars to environmental topics, he theorized that the increasingly market-driven media, having shifted from “the party line to bottom line,” will increasingly use “green news” to attract young and female audiences.

During his fellowship in China, Detjen examined the state of environmental journalism at some of the country’s largest news media organizations. The government-published *China Daily*, China’s largest English language newspaper, boasts a staff that includes many U.S.-educated journalists. The newspaper reads much like a government press release, most often relying upon one source, the official Xinhua News Agency. Nonetheless, Detjen explained that the staff were eager to learn more about environmental reporting; *China Daily* already devotes significant space to issues like air pollution, water shortages, and desertification. To his surprise, the tabloid-style *Shanghai Star* has demonstrated a great interest in the sensitive topic of the Three Gorges Dam project on the Yangtze River—though predictably, the coverage has avoided the most controversial environmental debates surrounding the dam. In addition, the Guangzhou-based *Southern Weekly*, well known for bold investigative reporting, is expanding its science and environment coverage.

Dancing with Shackles: The Effect of Censorship on Environmental Reporting

China’s most influential news media force is, without question, China Central Television (CCTV). With an audience of almost 300 million within China, CCTV’s programming has a tremendous impact on the country. A number of environmental programs are regularly featured on the media empire’s various television stations, from relatively mundane reports on endangered species to more controversial profiles on the linkages between corruption and widespread water pollution. CCTV’s journalists are subject to serious scrutiny on the stories they produce. While investigative reports are broadcast, those deemed too critical or an embarrassment to individuals, corporations, or the government are usually scrapped. During his visit with CCTV officials, Detjen was informed that official censors had blocked two of four recent environmental-related investigative reports.

While censorship is a part of every Chinese journalist’s work, they actually are not regularly subject to the censor’s red pen. Instead, reporters exercise a tremendous amount of self-censorship; Sun Yanjun candidly remarked, “As

long as we do not cross the boundaries and limits set by the government, we have freedom to report what we want.” Jim Detjen explained that Chinese journalists, by and large, have a good feel for which topics are most sensitive and likely to be restricted. Princeton University professor Perry Link has likened China’s brand of media censorship to a “giant anaconda coiled in an overhead chandelier [that] normally does not move. It does not have to. It feels no need to be clear about its prohibitions. Its silent message is ‘you yourself decide,’ after which everyone below makes his or her large and small adjustments—all quite ‘naturally.’”

Indeed, self-censorship is an accepted way of life for environmental journalists. One CCTV head environmental writer explained to Detjen that while news media freedom is greater today than five years ago, being a journalist in China is like “dancing with shackles.” This is not to say that Chinese journalists do not test the official boundaries. News media markets far removed from Beijing have been more adventurous in pushing the boundaries in reporting—e.g., the *Southern Weekly* in Guangzhou often makes news itself for publishing stories that cross the invisible line. Occasionally, individual journalists do step on the “wrong toes”—after her extensive reporting on the boiler plant dispute, Sun knew to temporarily tone down her reporting. Another Chinese journalist in the audience recalled her first published article in 1995, in which her report on the realities of prostitution in China resulted in a strong reprimand by her supervisor, though not a pink slip. The reporter recalled feeling a sense of empowerment, but also a stronger awareness of boundaries and how to push them a bit.

Much like its other Asian neighbors, news media in China has undergone gradual change in response to market forces. Chinese journalists are indeed hopeful that greater economic success will translate into greater press freedom. Jim Detjen quoted two journalists from Qinghua University who contend that “The marketization of news in China has turned the role of news reporting as a political propaganda tool to that of industrialization and popularization.... Economists and journalists are of one view that any news organization will be washed out if its news reporting does not meet the taste of the audience.” In other words, if journalists like Sun Yanjun can keep the Chinese public interested in environmental issues, green journalism in China is likely to grow.