ARTICLES

Observations of an Illiterate Law Professor: The Pearl River and Chinese Traffic Laws, Among Other Important Topics
*David K. Mears* ................................................................. 1

The Role of Judicial Review in Chinese and U.S. Energy and Climate Change Policy
*Patricia Ross McCubbin* .......................................................... 27

China’s Procuratorate in Environmental Civil Enforcement: Practice, Challenges & Implications for China’s Environmental Governance
*Jingjing Liu* ........................................................................ 41

NOTE

Keeping Up with Chinese Consumerism: Offsetting China’s Individually Generated Garbage with Regulatory and Social Mechanisms
*Brandon Gillin* ........................................................................ 69

Taming the Dragon: How Corporations in China Can Be Employed to Further Environmental Risk Management
*Kate Swartz & Guan Lin* .............................................................. 97
# Vermont Journal of Environmental Law

**Vermont Law School**

Volume 13, Issue 1  
Fall 2011

## 2011–2012

### Editorial Board

**Editor-in-Chief**  
Kristofer D. A. Hofstra

**Administrative Editor**  
Rachel B. Margulies

**Senior Managing Editor**  
Andrea A. Cone

**Senior Articles Editor**  
Thomas Nececkas

**Senior Notes Editor**  
Susan Lettis

**Managing Editors**  
Anthony J. Orlando  
Emily Slagle

**Web Editor**  
Benjamin Muth

**Articles Editors**  
Jessica Baker  
Holli Brown  
James Crannell  
Laura Griffin

**Head Notes Editors**  
Cameron Kovach  
Nolan Riegler  
Jordan Wimpy

**Production Editors**  
Cassandra Burdyshaw  
Inga Caldwell  
Stephen Campbell  
Katharine Hoeksema  
Stephanie Lucas  
Rachael Luzietti  
David C. Tessema  
Luis Torres

**Symposium Editors**  
Jonathan Gerard  
Zachary Lees  
Kate Swartz

**Events Editors**  
Susan Lettis  
Anthony J. Orlando  
Jonathan Gerard  
Emily Slagle

### Editorial Staff

<p>| Jeffrey Aslan | Jay Eidsness | Melissa Marks |
| Juliette Balette | Daniel Fineberg | Daniel Niedzwiecki |
| Colin Beckman | Andrew Fiscella | Zachary Price |
| Marcelo Betti | Alex Funk | Robert Reagan |
| Thomas Broderick | Priya Gandbhir | Walter Sainsbury |
| Danielle Changala | Keenan Hawkins | James E. Smith |
| Kathleen Chuchra-Zbytniuk | Cindy Hurt | Rachel Stevens |
| Mary S. Clemmensen | Sara Imperiale | William Sullivan |
| Amanda Dumville | Graham Jesmer | Pierce Wiegard |
| Zjok Durst | Douglas Johnson | Janssen Willhoit |</p>
<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Faculty Name</th>
<th>Faculty Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Susan Apel</td>
<td>Gregory Johnson</td>
<td>Craig M. Pease</td>
</tr>
<tr>
<td>Tracy L. Bach</td>
<td>Martha L. Judy</td>
<td>Brian Porto</td>
</tr>
<tr>
<td>Betsy Baker</td>
<td>Laurie C. Kadoch</td>
<td>Rebecca Purdom</td>
</tr>
<tr>
<td>Alexander W. Banks</td>
<td>Kenneth R. Kreiling</td>
<td>Anthony Renzo</td>
</tr>
<tr>
<td>Laurie Beyrannevand</td>
<td>Donald Kreis</td>
<td>Hilary Robinson</td>
</tr>
<tr>
<td>Margaret Barry</td>
<td>Gil Kujovich</td>
<td>Betsy Schmidt</td>
</tr>
<tr>
<td>Richard O. Brooks</td>
<td>Siu Tip Lam</td>
<td>Geoffrey B. Shields</td>
</tr>
<tr>
<td>Theresa Clemmer</td>
<td>Mark Latham</td>
<td>Stefanie Sidortsova</td>
</tr>
<tr>
<td>Jason Czarnecki</td>
<td>Yanmei Lin</td>
<td>Linda Smiddy</td>
</tr>
<tr>
<td>Liz Ryan Cole</td>
<td>Jingjing Liu</td>
<td>Benjamin Sovacool</td>
</tr>
<tr>
<td>Sheryl Dickey</td>
<td>Reed E. Loder</td>
<td>Pamela J. Stephens</td>
</tr>
<tr>
<td>Michael Dworkin</td>
<td>Michelle Martinez-</td>
<td>Gus Speth</td>
</tr>
<tr>
<td></td>
<td>Campbell</td>
<td></td>
</tr>
<tr>
<td>Stephen Dycus</td>
<td>James May</td>
<td>Jennifer Taub</td>
</tr>
<tr>
<td>John Echeverria</td>
<td>Michael McCann</td>
<td>Peter Teachout</td>
</tr>
<tr>
<td>Arthur C. Edersheim</td>
<td>Beth McCormack</td>
<td>Joan Vogel</td>
</tr>
<tr>
<td>Peg Elmer</td>
<td>Philip Meyer</td>
<td>Pamela Vesilind</td>
</tr>
<tr>
<td>David B. Firestone</td>
<td>Marc Mihaly</td>
<td>Jeff White</td>
</tr>
<tr>
<td>Jackie A. Gardina</td>
<td>Janet E. Milne</td>
<td>Stephanie J. Willbanks</td>
</tr>
<tr>
<td>Kat Garvey</td>
<td>Laura Murphy</td>
<td>L. Kinvin Wroth</td>
</tr>
<tr>
<td>Clara Gimenez</td>
<td>Sean Nolon</td>
<td>Tseming Yang</td>
</tr>
<tr>
<td>Oliver R. Goodenough</td>
<td>Cathryn C. Nunlist</td>
<td>Hanling Yang</td>
</tr>
<tr>
<td>Cheryl Hanna</td>
<td>Patrick Parenteau</td>
<td>Carl Yirka</td>
</tr>
<tr>
<td>Hillary Hoffman</td>
<td></td>
<td>Maryann Zavez</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visiting Faculty</th>
<th>Visiting Faculty</th>
<th>Visiting Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christine Cimini</td>
<td>Robert Rachlin</td>
<td>Robert Sand</td>
</tr>
<tr>
<td>Robert Gagnon</td>
<td>Rene Reyes</td>
<td>Jack Tuholskske</td>
</tr>
<tr>
<td>Adjunct Faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Bonnie Barnes</td>
<td>Walter Judge</td>
<td>Jason Okai</td>
</tr>
<tr>
<td>Robin Barone</td>
<td>Robert Keiner</td>
<td>Mark Oettinger</td>
</tr>
<tr>
<td>Nolan Burkhouse</td>
<td>Thomas Kohler</td>
<td>Tad Powers</td>
</tr>
<tr>
<td>Bernard S. Carrey</td>
<td>Julie G. Krishnaswami</td>
<td>Dan Richardson</td>
</tr>
<tr>
<td>Jennifer Emens-Butler</td>
<td>Peter B. Kunin</td>
<td>Maria Royle</td>
</tr>
<tr>
<td>John Evers</td>
<td>Matthew Levine</td>
<td>William P. Russell</td>
</tr>
<tr>
<td>Catherine Feeney</td>
<td>Cynthia Lewis</td>
<td>Christine Ryan</td>
</tr>
<tr>
<td>Randy Foose</td>
<td>Randall Mayhew</td>
<td>Anna Saxman</td>
</tr>
<tr>
<td>Jamie Gallagher</td>
<td>Alexandra Meise Bay</td>
<td>Belinda Sifford</td>
</tr>
<tr>
<td>Kevin W. Griffin</td>
<td>Dwight Merriam</td>
<td>Martha Smyrski</td>
</tr>
<tr>
<td>David Hall</td>
<td>Sheldon M. Novick</td>
<td>Naira Soifer</td>
</tr>
<tr>
<td>Phil Harter</td>
<td>Larry S. Novins</td>
<td>Jessica West</td>
</tr>
<tr>
<td>Martina Hofmann</td>
<td></td>
<td>Jane Woldow</td>
</tr>
</tbody>
</table>
OBSERVATIONS OF AN ILLITERATE LAW PROFESSOR: THE PEARL RIVER AND CHINESE TRAFFIC LAWS, AMONG OTHER IMPORTANT TOPICS

David K. Mears*

TABLE OF CONTENTS
Introduction ................................................................................................... 1
I. Reading Challenged ................................................................................... 5
II. Peace for the Pearl? .................................................................................. 7
III. Cabs and Compliance ............................................................................ 10
IV. Looking Backwards to the Future.......................................................... 13
   A. In With the Old ............................................................................ 14
   B. The Next Thirty Years .................................................................. 18
V. Relativity, China Experts and Climate Catastrophe ................................ 20
Conclusion ................................................................................................... 24

INTRODUCTION**

While I was in China, during the fall of 2010, I broke through a major technological barrier and wrote a series of blog entries reflecting on my experience of Chinese environmental law and policy. My blog topics included clothes drying methods, traffic rule enforcement, appliance

* David K. Mears is a former professor of environmental law at Vermont Law School where he directed the law school’s Environmental and Natural Resources Law Clinic. During the period from 2008 to 2010, he worked with the law school’s U.S.-China Partnership for Environmental Law supporting and participating in efforts to share U.S. experiences in environmental litigation and enforcement with Chinese environmental law scholars, attorneys, prosecutors, and judges. Mr. Mears spent the 2010 fall semester on a Fulbright Scholarship in Guangzhou, China teaching U.S. law. During his Fulbright, he taught at Sun Yat-sen University, and lectured at Renmin University, China University of Political Science and Law, and Ningbo University. He is currently serving as the Commissioner of the Vermont Department of Environmental Conservation. The views expressed in this essay are those of the author alone and do not necessarily represent the views of the State of Vermont.

** I would like to thank the VJEL editorial staff, Anthony Orlando, Kate Swartz, Rachel Stevens, Andrew Fiscella, and Colin Beckman, who went far beyond and above the obligations that typically fall on the editorial staff of a journal and contributed significantly to locating and citing the material referenced in this article.
instructions, walks along a river, and a boat cruise, among other mundane topics. How my blog entries relate to China or U.S. environmental law and policy are mostly an accident of me trying to connect my day-to-day experiences with my efforts to teach U.S. law and environmental policy to Chinese law students.

My hope is that this essay has synthesized those reflections into a somewhat useful set of observations, incomplete and anecdotal as they are; by an American law professor trying to understand the collective challenge to our planet that we all face. My ultimate conclusion is that the current course defined by our countries’ respective leaders, a course that relies primarily on our two nations pursuing competing economic futures separately and without full regard for the environmental consequences, will not satisfy our obligation to pass a better world on to our children and grandchildren.

Before elaborating on this conclusion, I want to offer a disclaimer, more substantial than the official, and hopefully obvious, disclaimer below that my views are my own and not the State of Vermont’s. This more important disclaimer follows: please do not allow the potential gloss of my former academic title or the Fulbright Scholarship to obscure the limited nature of my knowledge of China. While I have been carefully studying, observing, and reflecting on China’s system of environmental law for the last few years, I know only enough to be confident that what I know is superficial and incomplete. The bulk of my learning, as a result of studying China’s system, has really been to strengthen my understanding of the U.S. system of environmental law and policy. This is because teaching U.S. law required me to step back and consider principles including how our cultures and our laws have co-evolved. I was unable to come close to engaging in a similar analysis of Chinese law and policy.

In addition to considering my opinions, in light of my incomplete experience, it is generally wise to take anyone’s theories about China with a grain of salt. If I have taken one lesson from my experience in China that is worth holding on to, it is that American students of China’s legal system should maintain a healthy skepticism of any one person’s opinions, no matter how well-educated that person may be. China is full of contradictions and is not easily reduced to one individual’s set of assumptions. My experience of China was not and will not be the same as that of others who travel to or study China.

The reasons for these diverse experiences of China are easy to state, yet harder to comprehend unless you visit. China is a diverse place with a range of climates; differences in local and regional languages and cultures; and incredible and accelerating change over the past century. Due simply to the
pace of change, my experience of China last year, even if repeated in all
particulars, could not be my experience of China at any other time.

A quick side story illustrates the pace of change in China. I recently had
the opportunity to watch with a friend a slideshow of his experience in
China in the mid-1980s, really not that long ago. On his visit, he toured
many of the same major cities I visited. The contrast between the colorless
streets then, filled with people in drab clothing riding old bicycles, and
Chinese cities today, could not be more dramatic. My experience living in
Guangzhou is telling. Guangzhou is a dense, bustling city of fifteen million
people with a modern and complex transit system, which did not exist
fifteen, or perhaps even ten, years ago. Guangzhou has electronic flashing
billboards; neon lights; and all of the other trappings of any major
developed city in the West. This experience alone drives home the pace of
change in China, and illustrates the level of difficulty associated with trying
to guess where China will be in ten or fifteen years from now.

With my disclaimer in mind, and with hopes that anyone reading this
will thus be skeptical of my views, I intrepidly add another conclusion for
your consideration in support of the opening volley in the first paragraph of
this essay: If China does not rapidly develop a system of environmental law
and policy, in time to catch up with, manage, and reverse the environmental
and human health harms resulting from its highly accelerated pace of
economic development, then the efforts of the U.S., Japan, and Europe to
find an equilibrium in which they achieve ecological sustainability while
maintaining current standards of living will be for naught. Without a change
in China’s system of environmental law and policy, all of our efforts to find
new ways to reduce pollution and waste in the West, including lowering
greenhouse gas emissions and finding more ecologically sustainable ways
to live on the landscape, will not matter. Chinese economic development
policies have already caused massive and profound disruptions to China’s
natural systems as well as widespread impacts to the health of China’s
citizens. So amazing and rapid is China’s economic growth, however, that
the ecological and public health of the entire globe is now at risk if China’s
economic development policies do not change.

As I write this, the U.S. Congress and U.S. President are locked in a
showdown over whether to raise the debt ceiling to allow greater U.S.
borrowing. In addition to reflecting a shifting global economic paradigm
involving China as a major, if indirect, player, this debate mirrors a global
debate between the developed and the developing nations over climate
change. China, firmly in both, yet neither in the developed nor the
developing category, has chosen to side with the developing nations. Thus
positioned, China argues that it should be given the time and flexibility to
pursue economic policies that would allow it to obtain the same economic opportunities for itself as the developed nations have already achieved. Adding to the climate debt, argues China, is justified because it will allow China to climb out of poverty. “Economic development now, environmental protection later” has long been both the official and unofficial mantra of China’s leadership at all levels.1 China can pay back its climate and ecological debt later, goes the argument, when it has fully developed.2

The U.S., in contrast, argues that the collective climate debt levels are too high already, and that we risk global climate catastrophe unless major developing economies like China make substantial commitments to reduce greenhouse gas emissions.3 Fearing that unilaterally reducing greenhouse gas emissions will leave it at a competitive disadvantage, the U.S. demands that China take more aggressive steps to curb its emissions as a prerequisite to U.S. commitments.4 This debate shows no signs of being resolved, leaving us on a dangerous trajectory of continuous increases in greenhouse gas emissions at a time when experts are saying we need to go in the other direction.5

The lesson I have taken from the global climate debate between the U.S. and China is that the leadership of both countries are either foolish and not worried about climate change, or are locked into political systems that do not have the capacity to overcome the political imperative to allow mostly unmanaged economic development. Like the partisan fight over the debt ceiling in the U.S., the core argument over climate and carbon emissions is not driven by a desire to increase our debt. No one wants more

---

1. See CHARLES R. MCELWEE, ENVIRONMENTAL LAW IN CHINA: MITIGATING RISK AND ENSURING COMPLIANCE 6 (2011) (discussing how China’s leadership values economic development over environmental protection).
2. Id. at 6 n.15 (suggesting that China will continuously fail to implement environmental regulations so long as the pursuit of high economic growth is the government’s goal).
3. See Barack H. Obama, President of the United States of America, Remarks by the President at United Nations Secretary General Ban Ki-Moon’s Climate Change Summit (Sept. 22, 2009) (transcript available at http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-at-UN-Secretary-General-Ban-Ki-moons-Climate-Change-Summit/) (presenting the risk of global climate change resulting from putting economic interests over environmental and challenging developing nations to reduce their impact).
4. See George W. Bush, former President of the United States, President Discusses Global Climate Change (June 11, 2001) (transcript available at http://georgewbush-whitehouse.archives.gov/news/releases/2001/06/20010611-2.html) (suggesting that the United States will not commit to the Kyoto Protocol requirements to reduce greenhouse gas emissions if China is exempt from the Protocol’s requirements).
debt, whether in the form of national monetary debt or greenhouse gases emitted into the atmosphere. The core argument is over whether the economic status quo, in which the West is dominant, will continue. China is determined to upset that apple cart. The U.S. is hunkering down during a period of significant recession.

More than our respective economies, however, hang in the balance. Wise people in both nations recognize the risk to our environment and realize that the quality of our lives depend upon more than just gross national product. Some of those people have started to talk to each other, across the Pacific Ocean and a wide chasm of language, culture, and history. Whether we, as a global community, can envision and achieve a way to live on the planet such that we reduce greenhouse gas levels in the atmosphere, lower levels of waste and pollution, use natural resources at a sustainable rate, and protect and restore ecological health depends upon our leaders joining this discussion.

The following reflections, gleaned from my experiences in China, are intended to reinforce this conclusion.

I. READING CHALLENGED

The first step in joining a discussion with China about solving environmental challenges is to acknowledge another significant problem—a lack of shared fluency in language, history, and culture. For Americans, the problem is particularly acute, given our tendency to view our own culture, language, and history as the central narrative of modern history for the entire globe. We Americans can be justifiably proud of our stable democracy and the prosperity that we have achieved. Yet, if we do not take the time to understand countries like China, we will miss a critical opportunity to adapt to the modern realities of a global economy and the chance to share in the protection of the global environment. China can and wants to learn from us, but we need to be prepared to learn from China as well.

On China’s end, communications are clouded by decades of propaganda about America and an equal dose of nationalistic sentiment. For younger Chinese in particular, the myths are fading rapidly due to modern communication systems and the dramatic increases in openness to exchanges with the West, despite intense censorship. Nevertheless, Americans risk further inflaming nationalist tendencies in China if we do not enter into conversations with an appropriate level of humility. A good start would be for us to invest in providing the next generation of American citizens with an understanding of Chinese language and culture.
When I first arrived in China, I felt my inability to understand the Chinese language, written and spoken, acutely. This was a problem that was reinforced daily. Whether operating the small washing machine in our apartment or playing a movie on our DVD player, I was reduced to randomly pushing buttons. When I went to the market, I was frequently unsure whether I was buying dish detergent or cooking oil. The list of information that was inaccessible to me, without help, included everything written.

If not for the help of translators, I would have been challenged to get through the chores of daily living. Even with translation it was possible to go astray. Chinese and English are both challenging, somewhat temperamental languages, and they do not match up easily. Some of the translations of public signs I have encountered in China take a little time to sort out. “Watch out knockhead” on a low doorway is one I enjoyed on a foray into a Chinese building.

So, if I struggled to negotiate the language of daily living, how was I possibly going to manage to comprehend Chinese law? Law is, after all, dependent upon knowledge of language. Court decisions frequently turn on nuanced interpretations of words and phrases. Legislators spend large amounts of time and energy attempting to negotiate the language of statutes. Agencies frequently create new meanings for words in the course of administering programs. As one of my law school professors, David Firestone, is fond of pointing out, if you ignore a word in a statute because you do not understand what it means, you are probably committing malpractice.

Translating the words of Chinese law into American terminology is particularly challenging. A couple of years ago, Professor Jerome Cohen of New York University spoke at Vermont Law School on the topic of translation in the context of understanding Chinese law.6 His lecture, entitled “Lost in Translation: Is a Chinese ‘Judge’ a Judge?,” raised the importance of this issue for those who would try to understand Chinese law.7 He described the important differences between Chinese and U.S. judges; differences that go to the heart of our respective legal systems.8

Another scholar of Chinese law, Daniel Guttman of Johns Hopkins University and currently a visiting scholar at several Chinese universities,

---

7. Id.
8. Id.
has also written and lectured on this challenge. Professor Guttman cautions anyone who would purport to travel through Chinese law to tread carefully. In one article about environmental law, he even questions whether Chinese lawyers would have the same understanding of the word “law” held by U.S. lawyers.

After living in China and experiencing firsthand how foreign the written and spoken languages are to a native English speaker, I have a new appreciation for the admonitions of these distinguished scholars of Chinese law. One consequence of this appreciation was my effort in my classes with Chinese students to spend time discussing the meanings of the words I use in explaining U.S. law—I did not assume that my understanding of what the words “law” or “judge” equated to that of my students. Another consequence was my practice of listening carefully and asking many questions of my Chinese colleagues during our discussions of public interest and environmental law. I quickly learned that my first understanding of what Chinese scholars meant was not always the correct one.

One important step for me was to learn more patience in communicating and to ask many questions. I suspect that this approach might be useful in the context of climate negotiations as well. Perhaps our best long-term solution, one being pursued by an increasing number of universities and graduate schools—including Vermont Law School—is to invest heavily in a new generation of leaders and problem solvers who are fluent in Chinese culture, history, and language.

II. PEACE FOR THE PEARL?

Communication challenges aside, the scope of environmental problems we read about in American media are not exaggerated. If anything, the full breadth and impact of China’s economic transformation will not be known for many years. One way in which I began to understand the nature of the environmental challenges in China was by dealing with the constant and unavoidable air pollution—the ambient air quality in every Chinese city I visited was terrible. I have visited every major city in the U.S. and have

11. See id. (emphasizing how it is necessary to be careful researching Chinese law because of inaccuracies in translation between English and Chinese).
observed some of the worst smog that Houston and Los Angeles have to offer—yet, on their worst days, those cities could not equal the typical poor air quality in a modern Chinese city.

Another way I experienced the environmental challenges that China is facing was in my daily walks along the Pearl River. The Pearl River ("Zhujiang"), just beyond the North Gate of the South Campus of Sun Yat-sen University, is ancient and serene. Here, the river has mostly made the transition from an estuary to a river, but it is still tidally influenced and broad, with many channels through the city. This part of the river is considered to be the upper part of the Pearl River Delta ("Zhujiang Sanjiaozhou"), one of China’s leading manufacturing regions.

Every weekday morning and afternoon, I walked along the tree-lined walkway that has replaced the riverbank as I shepherded my two oldest children to and from the school bus that transported them to their middle and high school. Their bus stop was a thirty minute walk from our apartment. All along my walk, people danced, practiced martial arts, bicycled, sang, strolled, exercised, and did calligraphy. The calligraphy was particularly entrancing—the Chinese characters they painted were exquisite and temporary, since the artists used only water for their ink and it soon evaporated in the heat. Often, there was a pleasant breeze. My walk would have been an entirely peaceful experience except that I knew more than I wanted to about the river’s condition. The Pearl is not a river at peace.

Many afternoons, great thunderstorms came through in bursts of sideways downpours that shredded my cheap umbrellas. Most everyone disappeared from the streets and sidewalks, and the river churned in the gusts of wind. The thrashing trees would warn me that I also needed to look for shelter. I sometimes made it to the bus stop and would squeeze in under the plastic canopy with a cast of many others—business folk, laborers, students, even a few waiting to catch a bus. Such rains are part of the ecology of this region and should be an important contributor to the natural ebb and flow of the river’s life. In a way, the rains did help. After the rain, the dust and smog was washed away and the sidewalks and streets were clean.

The streets were clean, but the river was not. The sewers frequently overflowed during the heavy afternoon rains. It was a disturbing sight to see murky water gushing out of the sewers and I went to some lengths to give flooded streets a wide berth. The river was always full of sediment, but it gained a persistent sheen of oil after the rain where the canals and storm sewers connected. Much of the litter in the streets and sidewalks appeared to make its way into the river. Special city trash collection boats cruised along and collected debris floating in the river, accumulating large piles in
their hulls. The remainder headed out to sea, perhaps to end up in the ever-growing and floating mats of plastic flotsam and jetsam accumulating in the Pacific Ocean.

According to recent news reports, Guangzhou has invested roughly forty-nine billion yuan since 2008 (approximately nine billion U.S. dollars) in building thirty-eight new sewage treatment plants to collect and treat the city’s waste. The goal of this effort was to clean the river up before the Asian games in the fall of 2010. The Mayor of Guangzhou said he wants to return the river to a swimmable condition. He braved the pollution and went for a swim himself in the river while I was there, garnering much local publicity. (I am not certain how much publicity Governor Shumlin would get for swimming in our Vermont rivers, but it might be worth a news clip on the second page of the local news section).

While this investment of money and political capital has not returned the river to levels of quality that folks here recall as recently as the 1970s, this work has somewhat improved the river. On my river walks, I have seen large fish feeding at the surface and I have observed people catching fish from the river—alive, but likely full of toxins. Still, I fear that the city has far to go to make any significant improvement in the ecology of the river.

As quickly as the city is constructing sewage treatment capacity, new construction is adding population and creating more discharges. Some new apartment buildings appear to discharge sewage directly into canals flowing into the river. There is new construction in every direction and no visible effort to reduce or control construction or urban runoff. The people I have met who have lived in Guangzhou over the past three decades say that the city is almost unrecognizable due to its rapid growth. Combined with the additional facts that Guangdong Province is a major manufacturing center with many factory discharges and limited water pollution enforcement

resources to apply or compliance incentives to offer, this presents significant challenges for the government in its efforts to recover the river.\(^{16}\)

Still, the river has not stopped flowing, as is its nature, and, as long as it flows, it can begin to heal. In the U.S., we have learned that aquatic ecosystems can begin to return to a more natural state and to recover, at least partially, from even major human insults.\(^{17}\) I find it hopeful that there appears to be a growing public interest in helping the Pearl River return to a swimmable and fishable state in Guangzhou. I have observed that the river is clearly part of the life and history of this great city and it could become a legacy of modern Chinese leadership if they continue current efforts. My greatest hope is that the Chinese government—national, regional, and local—will recognize both the intrinsic value of resources like the Pearl River, as well as the potential for these ecological resources to provide substantial economic benefits while reducing public health hazards. In Vermont, we have collectively realized the value of resources like Lake Champlain, even as we are arguing about how best to protect it.

III. CABS AND COMPLIANCE

If the pollution problems on the Pearl River, or on any river in China, are to be addressed, then there will have to be some kind of accountability for those companies that do not see that it is in their self-interest to invest in pollution control or reduction. The challenge of creating a system to ensure accountability in China is more difficult to overcome than it might first appear. China has adopted many of the trappings of western environmental law, along with the accompanying regulatory systems, including national, provincial, and local environmental protection agencies.\(^{18}\)

When I first began discussing environmental enforcement with Chinese judges, regulatory agency heads, and prosecutors, I assumed that they had everything they needed for an effective enforcement system except the political will. I remain convinced that the will of the leadership is often lacking due to local economic protectionism, but even where the desire of government agencies to enforce is present, they are up against a culture that

---

views law enforcement differently than we conceive of it in the U.S. The challenge of enforcing environmental laws in China involves more than simply putting a system for enforcement in place. I got a glimpse of this challenge from observing traffic in China.

My son Isaac was almost flattened by a car one day while crossing the street outside of the South Gate of Sun Yat-sen University. The light changed, the pedestrian walk signal came on, the cars stopped at the intersection, and he stepped out into the street. At that moment, a small gray minivan drove around all of the stopped cars and sped through the intersection in the wrong lane at a high rate of speed. I yelled, Isaac stopped, and the minivan zipped past without hitting him. So, we all lived to add another story to our ongoing conversation about traffic in Guangzhou.

It was not just my family that complained about the traffic in China. Most people, Chinese and non-Chinese, with whom I interacted in Guangzhou and Beijing complained about the traffic. You might note that this is true in most cities. Certainly, complaining about traffic has been the norm in U.S. cities I have visited, such as Boston, New York City, Washington, D.C., or Seattle. So, maybe the fact that China’s largest cities have traffic congestion and that people complain about it does not qualify as a particularly surprising or insightful observation. Still, some aspects of the traffic in China are unquestionably different. For starters, few drivers here pay any meaningful attention to traffic laws. Chinese taxicabs (chu zu che) press the limits of the traffic laws most of all. I found myself wondering why this is so, and what kind of governmental response would cause cab drivers in China to change their behavior.

You may reasonably ask what taxicabs and their compliance with traffic laws might have to do with environmental law. The link for me is simple—understanding whether and why people comply with traffic laws (or do not) could serve as a ready source of information about how people react to governmental restrictions on their behavior in other areas of the law, including environmental regulation.

A popular theory regarding the persistent and growing environmental problems in China is that the government is not enforcing the environmental laws already on the books.19 Both Chinese and non-Chinese scholars have opined that this is so.20

---

19. Id. at 159.
20. See e.g., Canfa, supra note 18 (noting how China’s environmental laws already in existence are abundant, but not being properly enforced); see also e.g., Experts: Elizabeth Economy, COUNCIL ON FOREIGN RELATIONS, http://www.cfr.org/experts/japan-china-taiwan/elizabeth-c-economy/b21 (last
I am inclined to agree. Perhaps failure to enforce is the fundamental problem which needs to be addressed by the Chinese government. Perhaps manufacturers in China would stop polluting the air and water in China if the existing pollution laws were enforced. Perhaps the cab drivers in Guangzhou would all stop at red lights, stay within the speed limit, go the proper direction on one-way streets, and stop for pedestrians in crosswalks if the Chinese police enforced the traffic laws. Perhaps the best solution to environmental pollution in China would be for the Chinese government to simply increase the level of enforcement resources committed to regulating polluters. It is hard to imagine that such a strategy would not make an important difference and I shared and will continue to share that perspective in furtherance of that goal.

On the other hand, I have spent my career enforcing environmental laws in the U.S. and I have concluded that compliance with laws is more complicated than a simple equation. It would be ideal if [Law] plus [Enforcement] equaled [Compliance]. However, other significant factors come into play. Does the regulated community understand the law? How easily can the government measure and track compliance with the law? Does compliance with the law actually translate into meaningful environmental benefits? Are the consequences of failing to follow the law clear and are those consequences severe enough to outweigh the benefits of violating the law? Is there any social stigma associated with violating the law? And, perhaps most importantly, what incentives do government officials responsible for enforcing the law have, given that punishing people or companies that provide services, create jobs, and pay taxes inevitably creates a political backlash?

Embedded in many of these questions is the underlying question of whether the law reflects, or has the potential to drive, social norms of behavior. If a law is too far outside the bounds defined by social norms, attempting to enforce it becomes futile. There are many examples of U.S. laws in several jurisdictions that are not enforced. Perhaps too few in China care that taxis ignore red lights and run pedestrians and bicycles off the road. Perhaps too few care that the water, air, and soil are being polluted. If so, Chinese officials would do well to work to raise public awareness of these problems.

Another significant question in China is even more fundamental to the question of how to enforce; namely, what is the law that matters? Is it the

visited Dec. 4, 2011) (positing that China's environmental rule of law is ineffective due to lack of proper enforcement and adherence).
statute prohibiting water pollution, or is it the five-year plan recently handed down by the national government and translated into provincial and local plans? In China, the five-year plans may guide the actions of government officials more than statutes because the likelihood of those officials being promoted depends upon meeting the goals in those plans. Chinese citizens appear to know the difference between those laws that matter and those that do not. Until traffic law compliance becomes part of the metric by which local traffic officers are judged, keep a firm hand on the wrist of your children when you cross the street in Guangzhou.

IV. LOOKING BACKWARDS TO THE FUTURE

While in China, two experiences caused me to ponder the importance of understanding where we have been—even as we look forward—in my efforts to comprehend possible solutions to China’s environmental challenges. The first experience was an article by my former colleague Professor Don Kreis, who took some shots at the organizers of one of Vermont’s venerable traditions, the Tunbridge World’s Fair. In Professor Kreis’s opinion, the fair has excessively glorified the past through exhibits involving reenactment of early Vermont life and has failed to confront the fact that life in the early days of Vermont was mostly about surviving tough winters and enduring grinding poverty.

Through the miracle of the internet, I came across this article while trying to keep up with the exploits of my colleagues back home. As a long-time customer of the fair, I was affronted by the critique. (How can you criticize any event that offers farm animal exhibits, pie contests, carnival rides, ice cream stands, and a beer tent?) Perhaps more importantly, I was energized to examine what it is about the depictions of historic, rural Vermont life that I find compelling. That examination led me to ask what we may be losing in China’s rapid advance into the future that might be a part of the puzzle for solving our shared environmental dilemma.

The second experience was my participation in a series of presentations by U.S. Environmental Protection Agency Administrator Lisa Jackson

---


23. Id.
during her visit to Guangzhou.\textsuperscript{24} The theme of her main presentation highlighted the past “Thirty Years of Cooperation with China.”\textsuperscript{25} The Administrator’s presentation, upbeat and encouraging, was intended to send the message that the U.S. is hoping to continue to address shared environmental problems in the spirit of cooperation with China’s, government.\textsuperscript{26} For my part, I could not help but find irony in the theme, given the widespread environmental damage that has occurred in China over the past thirty years. Yet, there can be no question that Administrator Jackson’s choice to spend time in China, and any continued work by the EPA to maintain relationships, is time well spent. We must collectively do better in the next thirty years.

\textit{A. In With the Old}

Looking backward to find historic lifestyles in China as part of an examination of new solutions is not simple. I was unable to find the Guangzhou version of the Tunbridge World’s Fair exhibits demonstrating older traditions of living. Guangzhou is, like much of China, busily erasing all vestiges of its older neighborhoods and communities, replacing them with gleaming skyrises and apartment buildings. One consequence of living in a city of fifteen million people in China, at a time when the rate of technology production—not to mention consumption—was and is increasing at such an astonishing rate, is that I could not help but evaluate the upsides and downsides of all of the new buildings, cars, and the vast array of other fancy new machines and gadgets that surrounded me. Guangdong Province is, as reported in the China Daily, a model for the rest of China.\textsuperscript{27} So, while living in the apparent model city for the rest of China, I found myself wondering if this is the right future to imagine. Or, perhaps, some of what was and is being bulldozed, discontinued, and thrown away should be kept.

\textsuperscript{24} See 30 Years of Cooperation: EPA Administrator Mission to China, EPA.GOV, available at http://www.epa.gov/international/regions/Asia/china/mission2010.html#water (outlining the itinerary of Administrator Jackson’s mission to China).


\textsuperscript{26} See id. (recognizing a long history of U.S.-China cooperation on environmental issues and the need for the next generation to build on that tradition).

\textsuperscript{27} See Chen Hong, President Hails Shenzen SEZ a World “Miracle,” China Daily, Sept. 7, 2010, at 3 (reporting that Shenzen SEZ grew from a village to a “city of global clout”).
This concern about whether technological advances are all that they appear to be is an old debate. In full disclosure, I tend to fall into the Luddite end of the spectrum. That does not mean, however, that I do not rely on trains, planes, and automobiles to travel. I have a cellular telephone. I use a computer. I have, nonetheless, chosen to actively engage in resolving the tension between my lifestyle, relying as I do on many modern technological conveniences, and my professed values.

The mere fact that I, most Americans, and a rapidly increasing number of Chinese, drive cars, use electronics, buy mass-produced goods, including food produced in an industrial system of agriculture highly dependent upon petro-chemicals, is not a reason to refrain from engaging in a self-critical analysis of other possible lifestyles or a simpler future. That is, the fact that I have adapted to the world as it is today does not mean that I am stuck living the same way in the future. Part of my interest in spending a year in China was to have the chance to look at myself, my life, and America through a different lens.

Further, and importantly, looking to the past for answers is a perfectly sensible endeavor. Our species lived for many thousands of years without the benefits of the technologies of the past century, and did so without the massive destruction of natural resources and global climate alteration that we are currently experiencing. It is possible, even in dense urban settings, to dramatically change our lifestyles so that we consume far fewer resources. China, for all of its environmental problems, is actually proof of this fact. The average Chinese person consumes far less than the average American.28 I assume that changing our lifestyles will require more work by all of us, and a loss of daily conveniences. More work does not, however, translate into a poorer quality of life.

For example, in Guangzhou, as far as I can tell, nearly every person hangs their clothes out to dry. The balconies of most apartment buildings are festooned with clothes of every color. Hanging clothes out to dry turns out to be the kind of activity that millions of city dwellers in Guangzhou can absorb into their schedule and still find time to contribute to the single-fastest growing economy in the world. We could learn from this in the U.S. and save at least a few watts of electricity by doing without dryers. We could also get around quite easily on bicycles if we adopted the mode of urban living enjoyed by most, if a dwindling number, of Chinese.

Ironically, as China looks to the future, they see these behaviors as the past, and the lifestyles of Americans as the future. Given the number of people in China and elsewhere across the globe who look to the American lifestyle as a model, we have to be willing to rethink whether our model is really all that ideal. I shudder to imagine the number of new coal plants that will be required if the Chinese all shift to drying their clothes in electric dryers. We are just beginning to experience the geopolitical consequences of China’s rapidly growing thirst for oil in response to the fact that every person in China now wants to drive a car American style—the bigger the better.

We all naturally look to new technologies, not old ones, as the means to a better future. In his article, Professor Kreis recalls the sparkle of the 1939 New York World’s Fair and General Motors’ Futurama exhibit as the kind of vision that guided Americans then.29 His article asks us to look to that model of imagining as a better way of building our future because he finds this kind of thinking more hopeful than looking to our past.30 It is instructive, perhaps, that it was a Detroit car company that was defining America’s future in the Futurama exhibit, presumably based on a future that would benefit General Motors’ shareholders.31 That kind of thinking has, in large part, led us to the mess we find ourselves in today. If we have learned anything from Detroit car companies, it is that relying on corporations to define our future with the products they sell is a dicey proposition. We have let large corporations with promises of the good life offered by new technologies describe and limit our future for too long. New, bigger, faster, and shinier is not always better. A careful examination of our past may provide important clues to how we can live in the future.

If we want a livable future in a safe world, then America must work with China (not to mention India and Brazil and other developing nations) to define a new way of living that does not depend upon the General Motors kind of vision, or any vision so heavily dependent upon burning coal and oil, or splitting atoms. To do so, we need not and should not throw away our modern knowledge and all of the benefits that this knowledge has provided. Doing so would raise a host of other moral questions. There are still many millions of women who spend most of their days hauling water and washing clothes by hand, families who heat with wood and breathe the smoke in return for keeping the mosquitoes at bay, and children who suffer

29. Kreis, supra note 22.
30. Id.
31. Id.
from preventable waterborne diseases. These circumstances cannot be our vision of the future.

Today, many millions of laborers work under appalling conditions to produce the technologies that Americans use to make our lives more pleasant. These technologies consume dramatic amounts of electricity from the grid created during America’s era of modern prosperity. Also, most of the people suffering the poor working conditions associated with making all of the new stuff we buy are not living and working in the U.S. Many of the workers producing these technologies are right here in Guangdong Province, busily producing the goods you and I use every day. The conditions of their workplaces, while improving, are not yet sufficient and cannot serve as our vision of the future any more than the circumstances associated with the deep poverty of rural and undeveloped communities without access to electricity can.

Advocating for an examination of a future that includes the use of technologies and lifestyles from our past does not mean that we are dooming people in developing countries to a life of misery, nor that we are forcing developed nations to return to those conditions. We do not have to

---


33. See e.g., David Barboza, Apple Cited As Adding Pollution to China, N.Y. TIMES, Sep. 1, 2011, http://www.nytimes.com/2011/09/02/technology/apple-suppliers-causing-environmental-problems-chinese-group-says.html?r=1&scp=1&sq=working%20conditions&st=cse (noting that Apple admitted that 137 workers in Suzhou were seriously injured from a toxic chemical used in making the iPhone).

34. See U.S. Energy Information Agency, Share of Energy Used by Appliances and Consumer Electronics Increases in U.S. Homes, March 28, 2011, http://205.254.135.24/consumption/residential/reports/electronics.cfm (stating that the share of residential electricity used by appliances and electronics in U.S. homes has nearly doubled from 17 percent to 31 percent over the past three decades).


adopt all of the old technologies and ways of living, but some of them may help us achieve our quality of life without destroying the planet and without taking more than our share of the planet’s resources. Practices such as using pedal power to run a sharpening stone, operating a hand-turned cider press, growing herbs and vegetables in a kitchen garden, knitting sweaters, building and repairing furniture using simple carpentry tools, all of the wonderful crafts and tools demonstrated at the Tunbridge World’s Fair, may offer a vision of the past that, in turn, provides a key to our future.

B. The Next Thirty Years

In October 2010, while I was teaching at Sun Yat-sen University, U.S. Environmental Protection Agency (EPA) Administrator Lisa Jackson held a town meeting in Huashi Hall, a beautiful, old building on campus. It was a fun experience to be surrounded by students with their obvious interest and excitement in engaging with a high-level U.S. official.

The title of Administrator Jackson’s presentation was “30 Years of Cooperation with China.” It is tempting to launch off this title into a reflection regarding whether enough progress sufficient to warrant an anniversary celebration was actually achieved for the environment in China in the past thirty years. It is enough to note simply that, given the state of the environment in China today, whatever has transpired in terms of cooperation between the EPA and Chinese environmental agencies over the past three decades should not serve as the model for addressing China’s environmental issues in the future.

Perhaps looking for a better model, and to avoid aggravating the diplomatic tensions that would inevitably be associated with a more backward-looking reflection, Administrator Jackson focused on the future challenges for both countries. She did a good job identifying a number of challenges in China including climate change, air and water pollution, toxic pollution, and electronic waste. She also discussed a topic that is the focus of the Vermont Law School program in China: “building strong environmental institutions and legal structures.”

After her presentation, the Administrator took a series of questions from the students and faculty. The questions were tough, with a touch of Chinese pride, and the experience must have seemed to the Administrator a bit more

37. 30 Years of Cooperation, supra note 24.
38. Jackson, supra note 25.
like a press grilling in Washington, D.C. than a diplomatic effort to build relations with China at a far-flung Chinese university. In spite of this, she acquitted herself well. In response to the students’ grilling, Administrator Jackson noted with appropriate humility that the U.S. is implicated in many of the environmental problems in China and the world and described EPA’s efforts to make a difference.

She declined to engage in a debate about international climate change policy. Instead, the Administrator noted her hope that, by reducing emissions of greenhouse gases in the U.S., EPA can help to lay the groundwork for the U.S. to participate in a multi-lateral, international solution. She also spoke of her commitment to reducing the amount of electronic waste that the U.S. produces by working both to inform U.S. consumers and encouraging manufacturers to develop products that are more readily recycled.40 One of the more insightful aspects of the Administrator’s presentation was about water. She used a question about the Gulf Oil spill to talk about the problems of water pollution.41 Administrator Jackson quoted her high school calculus teacher who urged her to “think deeply about simple things” and suggested that we ought to “think deeply about water,” particularly because “climate is water manifested through the hydrologic cycle.”42 She noted that the health of the Pearl River is critical to the health of the people of Guangzhou, the health of the Pearl River Delta ecosystem, and the health of the Guangdong Provincial economy.43

It may be that water was on the Administrator’s mind because she had taken a short boat cruise on the Pearl River before the town hall meeting. In fact, she noted the similarities between the Pearl and the Mississippi River as it flows through New Orleans where she grew up.44 I was able to join the cruise along with Chinese environmental officials, the Chinese press, and EPA and U.S. Embassy staff. On the boat trip, the Administrator spoke with the director of the Guangdong Environmental Protection Bureau about the government’s efforts to restore the river.

I regretted that the tour was on a large, glassed-in tour boat and fear that this boat choice was intentional by the local officials. My experience has been that one gets a more honest appreciation of the Pearl if you can smell it and get close enough to see all of the interesting material in the river.
Still, I suspect the Administrator understands that the Pearl River is not in good health and, from what I could pick up through the translation of their conversation, the Chinese environmental officials appreciate that they still have much work to do to restore the Pearl.

In general, the Administrator’s theme was that the U.S. and China have a shared interest in solving environmental problems and that, by working cooperatively, each country can learn from the other.\footnote{Jackson, supra note 25.} I have had few opportunities to hear Administrator Jackson speak, and none in person, so hearing her speak at the town hall here in China was a new experience—I found her to be engaging, thoughtful, and direct. I also agree with her basic conclusion and hope that EPA continues to engage in meaningful efforts to cooperate with China on environmental protection.

All in all, one of the outcomes of Administrator Jackson’s visit is that the world grew smaller and more connected for me—that day’s events and the Administrator’s comments strongly reinforced my sense that solving the world’s environmental problems cannot happen without better cooperation between the U.S. and China. I wish Administrator Jackson the best in her agency’s work and I hope that the next thirty years of EPA’s cooperation with China will give us the kind of environmental progress we can truly celebrate.

V. RELATIVITY, CHINA EXPERTS AND CLIMATE CATASTROPHE

How you see and understand China depends upon your perspective: where you go, who you talk to, and the period of time you were there. This is the same simple concept of relativity foundational to understanding physics—where you stand and when you stand there determines what you observe. An understanding of this basic concept appears, however, to be missing from much of the current discourse about China. A friend recently recited a quote that captures the problem of finding a reliable expert on China. I roughly recall the quote as “you may be an expert on China after spending one month here, or after twenty years, but not any time in between.” I have not found the source of this quote but it captures my sense that the more I learn about China, the less I know. Much of what I have read is either hopelessly outdated (anything written before last week) or written by people who are in the “one-month expert” category.

As I have noted earlier in this essay, China is a complicated place full of contradictions. This country is large, nearly as big and geographically

\footnote{Jackson, supra note 25.}
\footnote{Id.}
diverse as the United States. Also (even though the population is largely Han Chinese), people here experience life quite differently depending upon their economic and educational status and whether they live in urban or rural communities. Perhaps most importantly, China is also changing at a rate so rapid that it is difficult to comprehend.

For these reasons, most of the facts provided to me about China have proven to be false or outdated. That includes cultural stereotypes like “the Chinese do not like sweets;” “all Chinese people are small and slender;” and “Chinese women cannot drive.” Many people in China love sweets. The people I have observed on the subway or on the sidewalks of Guangzhou, while generally less rotund than you might see in, say Houston, come in every possible size and shape. Regarding driving ability, many Guangzhou drivers are either exceptionally talented or highly reckless, depending on your point of view, but both men and women have to be good drivers to survive the traffic in this city.

My list of disproven facts also includes some larger errors, such as “Chinese people do not like conflict;” “Chinese people are not creative;” “your Chinese students will not actively participate in your classes;” or “China has a communist form of government.” With regard to conflict, I have witnessed some arguments that would rival those you might see in the Bronx—not as frequently, to be sure, but some great spats by any measure. My students have been as creative, active, and engaged as my U.S. students, even if they have required a bit more encouragement to speak out at times. And the system of government here is different than in the U.S. by a stretch, but the primary, and nearly exclusive, focus on the promotion of economic development by the Communist Party bears little resemblance to what I learned about Marxism in my high school and college government classes.

The list of misleading information you can find is not limited to reports and articles from those who are in the one-month expert category. I have been given inaccurate information by both Chinese and Americans and also by long-time scholars. It may be that the information I have found, or that was told to me, was once true or is true in some other part of China, but it is not true now—at least in the part of Guangzhou where I lived and worked. My friend Andrea Voyer, who spent last year in Guangzhou with her husband and my former Vermont Law School colleague, Jason Czarnezki, cautions anyone who attempts to describe China to avoid blanket statements. She encourages us (mainly Jason and me) to include a “based on my own experience in China” disclaimer in all descriptions of China. I did not fully appreciate why she was so careful to make sure that no one got away with making broad-brush statements about China until after I spent
more time there. I have found that many people, inside and outside of China, are so eager to make sense of this amazing place that they cannot help but try to translate their experience into some kind of deep truth about China.

Stand back just a little, however, and it is clear that the truth of what China is and will become is elusive and uncertain. So, I find myself somewhat bemused by the number of recent China experts, inside and outside of China, who have published articles over the past few years predicting China’s future. Depending upon these authors’ perspectives, they generally conclude that China is inexorably headed either to the top as a new world superpower, or to some catastrophic collapse as result of internal or external conflicts. I enjoy reading these books and articles, as they offer fascinating perspectives and visions of the future. They could be right. I find, however, that I am more persuaded—and reassured—by the writings of long-time students of China like Elizabeth Economy at Council on Foreign Relations46 or Washington Post reporters Steven Mufson and John Pomfret.47 This latter category of China observers seem to me better attuned to the complexities and nuances of China.

To repeat myself, I do not claim to be any kind of an expert on China, and I have almost no idea where China’s future lies. I have learned enough about China, however, to believe that it would be an astonishing feat if anyone could figure out where this nation of over a billion people will be in five years, and it would require deep magic to know where China will be in ten years.

So, having once again established that you should take all statements from erstwhile China experts with a grain of salt, I will now violate this rule and offer an unconditional opinion: the fate of the world as we know it rests upon China’s decisions regarding its energy resources. China’s dramatic economic expansion and the large volumes of inexpensive manufactured goods exported to the rest of the world is supported by an equally dramatic increase in energy use.48 This energy is supplied in large part by coal.49 Even if the rest of the world somehow weans itself off coal, China is

46. Economy, supra note 20.
49. Id. at 3.
headed in the opposite direction—taking all of us towards the precipice of catastrophic climate change at an accelerating rate.

No matter that China is making a major investment in green sources of energy—this is an important contribution, but China’s coal consumption continues to rise so fast as to make its green energy development efforts seem trivial. The rest of the world is not innocent of this expansion. Not only do developed countries in the western hemisphere consume much of what China produces, but we are also now facilitating China’s addiction to coal.

Elisabeth Rosenthal wrote a startling article in the New York Times last year about the fact that coal producing countries like the U.S. and Australia are rapidly stepping up coal shipments to China even as policies in their own countries are forcing a slow-down in the development of coal-fired power. For example, Rosenthal cites the U.S. Energy Information Administration, noting that U.S. shipments of coal to China have jumped from a couple of thousand tons in 2009 to nearly three million tons in the first six months of 2010. For longer-term, but equally depressing analyses, you can look to a website created by the World Resources Institute that evaluates China’s contributions to greenhouse gas emissions. The line on the graph predicting China’s greenhouse gas emissions slopes steeply upward.

The carbon emission trends associated with China’s economic expansion, which has been accelerating over the past decade, provide the underlying factual underpinnings of Vanderbilt Law School Professor Michael Vandenbergh’s article entitled Climate Change: The China Problem. He notes that the efforts of the United States and European Union, even if successful in dramatically reducing carbon emissions under the Kyoto Protocol, will not be enough because China will emit five times more carbon over the next twenty-five years than will be saved under Kyoto.

51. Id.
55. Id. at 915.
So, what do we do? A dialogue among Chinese and U.S. leaders at the highest levels is critical to making real progress. China and the U.S. are Bad Guys Number One and Two in the ongoing and potentially catastrophic climate disruption we are experiencing. Our current leaders appear determined to stay locked in a contest of blame avoidance and economic one-upmanship and, for this reason, are making limited, if any, progress. This shortsighted approach may be because both nations are relying upon bad information and a poor understanding of each other’s systems of governments, cultures, and peoples. Both nations are pursuing economic development as the latest version of the race to global dominance without appreciating the increasing interdependence of all of the world’s economies and the absolute interdependence of our shared global ecosystem.

In order for us to achieve a true dialogue, we need a new generation of leaders and problem-solvers who are fluent in both languages and cultures. Otherwise, we will continue to pretend that we can each proceed separately, missing the point that our economic and ecological futures are inextricably linked. This new generation must include economists, ecologists, lawyers, sociologists, engineers, and others who can communicate freely without misunderstandings resulting from speaking across a significant language and culture divide. This new generation of experts must be willing to take the time to listen to each other, to learn, and to work together to sort out these issues. I cannot count myself among this new generation of experts, but I feel proud to have had the opportunity to work with academic institutions in China, the United States, and elsewhere who are investing in the students who must step up to deal with this amazing mess we have created for them.

A new generation of leaders and experts can bring a different perspective. They will need to be less interested in prognosticating about whether the U.S. or China or some other country will rule the world, and more interested in working together to develop a stable, just, and global carbon-free economy. From working with my former students in the U.S. and in China, it is my impression that a new generation is on the way.

CONCLUSION

Given the breadth and scope of the environmental challenges facing the world, I sometimes find myself wondering whether working on environmental issues in Vermont really makes a difference. At the same time, given the breadth and scope of the environmental challenges facing the world, I can persuade myself that Vermont is exactly the right place to be. Perhaps, in Vermont, we can establish the model of a sustainable
economy, in which our citizens have a good quality of life because we have preserved our natural and working landscape, and maintained the quality of our water, air, and soil. We can, once we have honed our model, offer it to China as an alternative approach to providing a high quality of life for its citizens.

Translating the decisions that work here, in a small-scale, intensely pluralistic, and democratic state, into the kinds of actions that will work under the different kind of governance model currently present in China will not be easy work. Even assuming we have the model right in Vermont (and we still have some work to do), Chinese leaders may balk at a system that relies so heavily on citizen involvement. Further, as I have acknowledged above, China can make a reasonable case that the U.S. quality of life has come with a legacy of environmental damage, and we need to be prepared to acknowledge that fact before touting our approach as the solution. Chinese citizens are, however, beginning to understand what is being lost in their country’s myopic pursuit of economic development at the expense of all else. In hopes that China’s leaders will acknowledge this understanding, we in Vermont and the U.S. should be prepared to participate in a dialogue that involves both of our nations as well as the rest of the globe.
THE ROLE OF JUDICIAL REVIEW IN CHINESE AND U.S. ENERGY AND CLIMATE CHANGE POLICY

Patricia Ross McCubbin*

TABLE OF CONTENTS

Introduction ........................................................................................................... 27
I. Judicial Review of Agency Action—The U.S. and Chinese Perspectives ................................................................. 28
II. Obama Administration Rules Under the Clean Air Act.......................... 31
    A. The Endangerment Finding ................................................................ 32
    B. Tailpipe Standards for Vehicles ........................................................... 33
    C. The Tailoring Rule and the Triggering Rule ....................................... 34
III. Challenges to EPA’s Greenhouse Gas Rules ......................................... 36
Conclusion ......................................................................................................... 40

INTRODUCTION

As part of any comparison of Chinese and U.S. policies on energy and climate change,1 we should consider the role of judicial review in spurring or blocking government action. While the Chinese government can adopt broad requirements for energy efficiency and reduced greenhouse gases without being delayed by lawsuits, in the United States the efforts of the Obama Administration to regulate greenhouse gases under the federal Clean Air Act may be tied up in litigation for the next few years. Details about the Obama Administration’s rules and the lawsuits challenging them are

*Professor of Law, Southern Illinois University School of Law. I thank Mark Harrison Foster, Ian Sinderhoff and the other Journal staff members for successfully organizing the conference at which these remarks were delivered. I also thank Kory Watson, SIU Class of 2011, for excellent research assistance, and John Clark, SIU Class of 2012, for editorial assistance.

1. This article reflects the author’s remarks at the Vermont Journal of Environmental Law’s 2011 Symposium, where Chinese and U.S. scholars spoke about various environmental issues in China. See Symposium, China’s Environmental Governance: Global Challenges and Comparative Solutions, 12 Vt. J. ENVTL. L. 591 (2011). The information presented here was accurate as of early March 2011, when the Symposium was held.
provided below. Although judicial oversight may provide substantive benefits in the long run, the uncertainties and delays it creates can frustrate important policy efforts. Thus, the contrast between the Chinese and U.S. approaches is a stark reminder of the pros and cons of judicial review.

I. JUDICIAL REVIEW OF AGENCY ACTION—THE U.S. AND CHINESE PERSPECTIVES

From an American perspective, lawsuits that challenge federal agency actions are valuable because they protect the rule of law. Among other things, independent judicial oversight can enforce the will of Congress if, say, a recalcitrant agency refuses to meet an obligation specified in federal legislation. Judicial review also ensures compliance with procedures that allow citizens to observe, participate in, and shape government policy-making. In addition, courts can block agency actions that appear arbitrary or capricious, ferreting out decisions that may be more a product of political cronyism than reasoned deliberation.

Intervention by courts, however, can also have adverse consequences. Because the judiciary only becomes involved on an ad hoc basis, considering challenges that are filed against some but not all actions of a particular agency, and because multiple judges and courts may be overseeing that one agency, the resulting judicial decisions create “regulation through random, ex-post directives rather than through managerially coherent, ex-ante controls.” Judicial review can also disrupt agency agendas and misallocate agency resources.

Of most relevance to this panel, judicial oversight can add considerable delays to the implementation of agency policies. One type of delay occurs through the “ossification” of the bureaucracy’s internal deliberative process, with personnel spending an inordinate amount of time trying to create an extensive administrative record to defend against “hard look” judicial

3. See id. at 525 (explaining that judicial review promotes “procedural regularity”).
4. See id. (stating judicial review promotes “protection against arbitrariness and selectivity”).
Professor Sunstein also discusses other benefits of court oversight, including more efficiently allocating societal resources, ensuring better wealth distribution, promoting various social goods, and working against discrimination. Id. at 524-525.
5. Id. at 526.
However, this article is focused on delay of a different sort—the delay that results from judicial intervention after an agency acts, when a court may stay the agency’s decision during the long months of litigation, and may eventually invalidate the decision altogether and send it back to the drawing board.

In contrast to the American approach, Chinese judicial oversight of administrative action is only available in narrow circumstances. As Professor Karen Halverson explains, “independent, judicial review of administrative acts” is not the Chinese norm, as “administrators tend to enjoy greater power and influence than judges.” In particular, China’s Administrative Litigation Law only allows for review of “specific” or “concrete” acts of government bureaucracies, such as “the imposition of a fine [or] the withholding of a license.” Chinese law, however, bars review of “administrative rules and regulations, or decisions and orders with general binding force.”

Thus, the many broad requirements adopted by the Chinese government on energy and climate change are unreviewable. No suit could be brought, for example, to challenge China’s fuel efficiency requirements for automobiles, which are stricter than U.S. standards. Emission limits for coal-fired power plants or any other manufacturing sector are also not subject to judicial scrutiny. Similarly safe from review are mandates to implement the 12th Five-Year Plan, issued in draft in March 2011, which is the most recent comprehensive economic planning document adopted by the national government. That plan emphasizes energy conservation and environmental protection, calling for, among other things, a sixteen percent reduction in energy consumption per unit of gross domestic product.

9. Id. at 356 & n. 160.
10. Eva Pils, Asking the Tiger for His Skin: Rights Activism in China, 30 Fordham Int’l L.J. 1209, 1236 (2007). See also id. at 1236 n. 91.
(“GDP”) and a seventeen percent reduction in carbon dioxide emissions per unit of GDP.\footnote{Id.}

Even a government order to close certain production facilities would likely be unreviewable. In August 2010, for example, the Ministry of Industry and Information Technology directed more than 2,000 energy-intensive operations (such as cement works, iron foundries, and paper mills) to cease operations by September 30 of that year.\footnote{Michael Standaert, \textit{China Orders 2,087 Facilities to Close Because of Outdated Production Practices}, World Climate Change Rep. (BNA), August 17, 2010. (Waiting on ILL.)} Although at first glance such a closure order might appear to be a “specific” or “concrete” act and thus reviewable, a Chinese colleague at this conference concluded that, in fact, an order of such broad scope would more likely count as a decision “with general binding force,” exempting it from review under the Administrative Litigation Law.\footnote{Author’s personal communication with Jingjing Zhang at the Vermont Journal of Environmental Law 2011 Symposium (March 2, 2011).}

Moreover, even if that sweeping closure order were reviewable, only litigants with “legitimate rights and interests” may bring suit.\footnote{Andrea Cheuk, \textit{The Li’An (“Docketing”) Process: Barriers to Initiating Lawsuits in China and Possible Reforms}, 26 UCLA Pac. Basin L.J. 72, 80 n. 47 (2008).} In addition, Professor Halverson explains that “courts may only review administrative decisions for their legality—that is, they may not inquire into decisions’ appropriateness or reasonableness.”\footnote{Halverson, \textit{supra} note 8, at 357.} In addition, while procedural infirmities could technically be the basis for reversal, “in practice, courts very rarely overrule the decision of an administrative body . . . for procedural reasons.”\footnote{Peter Howard Corne, \textit{Creation and Application of Law in the PRC}, 50 AM. J. COMP. L. 369, 377 (2002).} Instead, to avoid “making the administrative body lose face,” the court may simply note the irregularity and urge the administrative body to “pay more attention to procedure” in the future.\footnote{Halverson, \textit{supra} note 8, at 357. But cf. Titi Liu, \textit{Transmission of Public Interest Law: A Chinese Case Study}, 13 UCLA J. INT’L L. & FOREIGN AFF. 263 (2008) (offering a more optimistic view of the potential to catalyze state action in China).}

Thus, while the Chinese system does not leave room for the benefits of judicial review except in limited circumstances, there is also no delay of broad social policy initiatives. The government can quickly adopt mandates on energy and climate change without litigation.\footnote{Id. But cf. Titi Liu, \textit{Transmission of Public Interest Law: A Chinese Case Study}, 13 UCLA J. INT’L L. & FOREIGN AFF. 263 (2008) (offering a more optimistic view of the potential to catalyze state action in China).} Such prompt governmental action is not often found here in the United States.

\footnote{Of course, there is a separate question about the government’s ability to enforce these mandates. See Patricia Ross McCubbin, \textit{China and Climate Change: Domestic Environmental Needs,}}
II. OBAMA ADMINISTRATION RULES UNDER THE CLEAN AIR ACT

With no climate change legislation moving on Capitol Hill, U.S. efforts to regulate greenhouse gases at the federal level are focusing on the Clean Air Act. In the last eighteen months, the U.S. Environmental Protection Agency (“EPA” or “the Agency”) has adopted four controversial rules under that statute that, individually or in combination, require reductions in greenhouse gases from cars, industrial facilities, and other sources.

In true American fashion, those regulatory efforts were prompted by litigation. In the seminal decision of Massachusetts v. EPA, the U.S. Supreme Court directed EPA to determine whether emissions of greenhouse gases endanger public health or welfare within the meaning of a key provision of the statute. The case arose after EPA, under President George W. Bush, denied a petition from a group of states and environmental organizations asking the Agency to begin the process of restricting emissions of those pollutants from cars, trucks, and other vehicles. When EPA denied the petition, the states and other coalition members sued, claiming the Agency violated its legal duty under the Clean Air Act.

In Massachusetts, the Court rejected EPA’s argument that it lacked authority under that statute to address global climate change. Instead, the Court held that the Clean Air Act’s “sweeping definition” of an “air pollutant” included greenhouse gases, and that no activity on Capitol Hill since passage of the Act in 1970 “remotely suggests that Congress meant to curtail [EPA’s] power to treat greenhouse gases as air pollutants.”

EPA also argued that even if it were authorized to regulate greenhouse gases, it would not be “effective or appropriate” to do so. The Agency highlighted, for example, the “important uncertainties in our understanding of the factors that may affect future climate change.” It also noted that setting vehicle emission standards would result “in an inefficient, piecemeal approach to addressing the climate change issue.” In addition, EPA expressed concern that unilateral action by the United States would

23. Massachusetts, 549 U.S. at 528.
24. Id. at 528–29.
25. Control of Emissions from New Highway Vehicles and Engines, supra note 22, at 52,930.
26. Id.
27. Id. at 52,931.
interfere with President Bush’s efforts to negotiate emissions reductions from China and other nations.\textsuperscript{28}

The \textit{Massachusetts} Court disagreed, holding that most of EPA’s reasons for not acting, such as the Bush Administration’s foreign policy goals, were improper because they had “nothing to do with whether greenhouse gas emissions contribute to climate change.”\textsuperscript{29} Although the Court did not direct EPA to find that greenhouse gases do endanger the public health or welfare, it directed the Agency to make a decision one way or another unless “the scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming.”\textsuperscript{30}

Without the \textit{Massachusetts} decision, EPA might have declined to regulate greenhouse gases for years. Thus, the case illustrates the benefit of allowing parties to sue federal agencies refusing to implement congressional legislation. Such litigation can spur action that, for one reason or another, government agencies do not want to undertake.

\textbf{A. The Endangerment Finding}

To implement the \textit{Massachusetts} ruling, EPA spent more than one year studying the complex scientific, legal, and policy issues involved in potentially restricting greenhouse gases under the Clean Air Act. In July 2008, EPA issued an Advance Notice of Proposed Rulemaking that presented extensive information to solicit public comment on the many regulatory questions it was facing.\textsuperscript{31} In the preface, the Administrator of EPA emphasized the Bush Administration’s view that greenhouse gases should not be controlled under the Clean Air Act, writing that such “an outdated law . . . is ill-suited for the task of regulating global greenhouse gases” and regulation will lead to “potentially damaging effect[s] on jobs and the U.S. economy.”\textsuperscript{32}

In April 2009, as one of its first major actions on climate change, the Obama Administration reversed that stance and issued a proposed finding that six prominent greenhouse gases may reasonably be anticipated to

\textsuperscript{28} Id.
\textsuperscript{29} \textit{Massachusetts}, 549 U.S. at 533.
\textsuperscript{30} Id. at 534.
\textsuperscript{32} Id. at 44,355.
endanger the public health or welfare. EPA issued the final decision incorporating that finding in December 2009. While this highly controversial rule is often referred to as the “endangerment finding,” it actually consists of two distinct findings, reflecting the inquiries required by section 202(a)(1) of the Clean Air Act. First, in the true “endangerment finding,” EPA found that emissions of carbon dioxide and five other greenhouse gases “may reasonably be anticipated to endanger the public health and to endanger the public welfare of current and future generations” by contributing to climate change. The adverse health effects, according to EPA, include “changes in air quality, increases in temperatures, changes in extreme weather events, increases in food and water borne pathogens, and changes in aeroallergens,” all of which can lead to illnesses and deaths. Adverse effects on the public welfare, in EPA’s view, are posed by “numerous and far-ranging risks to food production and agriculture, forestry, water resources, . . . coastal areas, energy, infrastructure and settlements, and ecosystems and wildlife.” Separately, in the “cause or contribute finding,” EPA also found that four greenhouse gases are emitted by new motor vehicles and cause or contribute to the pollution that endangers the public health and welfare. (Following the common practice, this article will refer to the rule generally as the “endangerment finding,” unless addressing the Agency’s conclusions about vehicles in particular.)

B. Tailpipe Standards for Vehicles

To implement the endangerment finding, on April 1, 2010, EPA finalized standards for vehicles that for the first time limited the amount of greenhouse gases that may be released from tailpipes. The new requirements resulted from a historic agreement brokered by the Obama

37. Id. at 66,526.
38. Id. at 66,534.
39. Id. at 66,536.
Administration with automakers, labor leaders, environmental organizations, the state of California, and other states. Under the rule, all new passenger cars and light trucks for model year 2016 would have to restrict carbon dioxide emissions to 250 grams per mile. Vehicles in the earlier model years of 2012 through 2015 are allowed to release slightly more carbon dioxide. Because the only feasible way to reduce those emissions is to burn less carbon-based fuel, those tailpipe standards were issued jointly with improved fuel economy standards from the National Highway Traffic Safety Administration. EPA’s emission limit translates to roughly 35.5 miles per gallon (“mpg”) of fuel usage on average, up from 27.8 mpg for cars in 2011.

C. The Tailoring Rule and the Triggering Rule

While some critics have challenged the tailpipe standards for vehicles, more controversy has been stirred by the potential emission limits for tens of thousands of power plants, industrial facilities, commercial operations and other buildings that emit greenhouse gases. The emission standards of particular concern stem from the Prevention of Significant Deterioration (“PSD”) preconstruction review program, which requires, among other things, that new “major” facilities meet emission limits reflecting the best available control technology (“BACT”). For greenhouse gases, industries worry that meeting the BACT requirement might not simply involve improving energy efficiency, but also switching to low carbon fuels, reconfiguring the operations of particular plants, or even trying to capture and sequester carbon emissions.

The BACT requirement applies to any “pollutant subject to regulation” under the Clean Air Act. With the tailpipe standards now in place, six greenhouse gases definitely are “subject to regulation,” and, thus, any new facility with the potential to emit those pollutants above the statutory

43. Id. at 25,400.
44. Id. at 25,328.
45. Id. at 25,330.
46. Id. at 25,331.
49. Id.
thresholds would be subject to the stringent control requirements.\textsuperscript{50} The Clean Air Act provides generally for a 250 ton per year threshold for new stationary sources.\textsuperscript{51} With emissions of greenhouse gases several orders of magnitude greater than emissions of conventional pollutants, even schools, apartment buildings, hospitals, and farms could be caught in the PSD permitting program.\textsuperscript{52} EPA estimates that 82,000 sources could be affected annually, compared to roughly 800 sources regulated per year under the current PSD program.\textsuperscript{53}

In response to concerns about these potentially enormous regulatory burdens, EPA adopted two rules—known as the “tailoring rule”\textsuperscript{54} and the “triggering rule”\textsuperscript{55}—that attempt to phase in the control requirements and limit them to the 1600 or so largest sources.\textsuperscript{56} In particular, the triggering rule provides that greenhouse gases will be “subject to regulation” as of January 2, 2011, when the tailpipe standards for model year 2012 vehicles take effect.\textsuperscript{57} The tailoring rule then provides that, for the first six months of 2011, only sources that are already subject to the PSD permitting program for other pollutants will also undergo PSD review for greenhouse gases.\textsuperscript{58} After that, the applicability of the program will depend on a source’s greenhouse gas emissions.\textsuperscript{59}

The tailoring rule also dramatically alters the thresholds for “major” new sources. For example, a new source will be subject to the PSD program if it has the potential to emit 100,000 tons of greenhouse gases per year (measured in carbon dioxide equivalency), rather than the 250 ton threshold set by the statute.\textsuperscript{60} EPA relies on the doctrines of “administrative necessity” and “avoiding absurd results” to support the tailoring rule, arguing that

\textsuperscript{51} 42 U.S.C. § 7479(1).
\textsuperscript{52} MINORITY STAFF OF S. COMM. ON ENVIRONMENT AND PUBLIC WORKS, 112TH CONG., EPA’S ANTI-INDUSTRIAL POLICY: “THREATENING JOBS AND AMERICA’S MANUFACTURING BASE” 14 (Comm. Print Sept. 28, 2010).
\textsuperscript{54} Id. at 31,514.
\textsuperscript{55} Reconsideration of Interpretation of Regulations that Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17,004 (April 2, 2010) (to be codified at 40 C.F.R. pt. 51, 52, 70, 71) [hereinafter Reconsideration of Interpretation].
\textsuperscript{56} Prevention of Significant Deterioration, 75 Fed. Reg. at 31,516; Reconsideration of Interpretation, 75 Fed. Reg. at 17,007.
\textsuperscript{57} Reconsideration of Interpretation, 75 Fed. Reg. at 17,007.
\textsuperscript{58} Prevention of Significant Deterioration, 75 Fed. Reg. at 31,516.
\textsuperscript{59} Id.
\textsuperscript{60} Id. (The tailoring rule similarly alters the scope of the Title V operating permit program.)
III. CHALLENGES TO EPA’S GREENHOUSE GAS RULES

All four of EPA’s greenhouse gas rules—the endangerment finding, the tailpipe standards, the tailoring rule, and the triggering rule—are being challenged in court. The litigants represent a broad spectrum of American society, including scores of industries, many states, individual members of Congress, and even some environmental groups, who generally support EPA’s efforts but criticize some aspects of the rules.62

Challengers to the endangerment finding include the states of Virginia, Alabama, and Texas, as well as the U.S. Chamber of Commerce, the National Association of Manufacturers, the American Farm Bureau, Peabody Energy, many other industrial and commercial interests, and Republican members of the U.S. House of Representatives.63 These litigants are not concerned so much by the tailpipe standards that flow directly from the endangerment finding as they are concerned about the PSD permitting requirements for stationary sources that follow. In this suit, seventeen states and several environmental organizations intervened on EPA’s behalf,

61. Id. The Agency also emphasizes the “one-step-at-a-time” doctrine, which, according to EPA, “authorizes agencies to implement statutory requirements a step at a time.” Id. Stationary sources may be subject to requirements for greenhouse gases that go beyond the PSD and Title V permitting programs. EPA is considering greenhouse gas standards for coal-fired power plants and other industries under section 111 of the Clean Air Act, which calls for “new source performance standards” or their equivalent for existing sources. Steven D. Cook, EPA to Issue Performance Standards for Utility, Refinery Greenhouse Gases, 41 Env’t Rep. (BNA) 2845 (December 31, 2010). In addition, two environmental groups (the Center for Biological Diversity and 350.org) filed an administrative petition with EPA in late 2009, arguing that the endangerment finding compels the Agency to adopt national ambient air quality standards for greenhouse gases. Andrew Childers, Advocacy Groups Ask EPA to Set Standards for Carbon Dioxide, Other Greenhouse Gases, 40 Env’t Rep. (BNA) 2751 (Dec. 4, 2009). See also Patricia Ross McCubbin, EPA’s Endangerment Finding for Greenhouse Gases and the Potential Duty to Adopt National Ambient Air Quality Standards to Address Global Climate Change, 33 S. Ill. U. L.J. 437 (2009) (analyzing the merits of the administrative petition filed by the Center for Biological Diversity and 350.org).


while a dozen states intervened in opposition. Interestingly, most major players in the auto industry are not involved, having agreed not to challenge the endangerment finding or the accompanying tailpipe standards as long as the federal and state governments guarantee that the industry will face only one nationally uniform set of requirements.

The challenges to the endangerment finding will involve a complex interplay between science and the law. A few parties, for example, may directly challenge the scientific consensus on climate change, arguing that increases in global temperatures are not caused by anthropogenic greenhouse gases. Some parties will likely also attack EPA’s reliance on the reports of the Intergovernmental Panel on Climate Change (“IPCC”), pointing to a controversy known as “Climategate” (concerning emails from climate scientists) to suggest the IPCC’s data was manipulated for policy-driven purposes. However, because the U.S. Court of Appeals for the D.C. Circuit usually defers to agency expertise on highly-technical questions, these scientific arguments may prove ineffective.

More persuasive will be claims that, in the endangerment finding, EPA failed to comply with the framework established by the Clean Air Act for considering the dangers posed by air pollutants. Some petitioners will probably argue, for instance, that EPA failed to find a “significant” risk from greenhouse gases, as ostensibly required by case law, to prevent the Agency from imposing extraordinary burdens to address trivial harms. They will also likely argue that EPA’s extreme interpretation of endangerment essentially assumes pollution is harmful unless it is shown to be safe, and thus improperly shifts the burden to opponents to demonstrate otherwise. In addition, challengers may assert that Congress expected pollutants to endanger the public health through direct routes, such as by inhalation or skin contact, rather than through the indirect changes in weather and climatic events predicted from greenhouse gases. Turning to the second

64. Id.
65. At the time of this conference in early March 2011, briefing was not yet complete.
67. Indeed, shortly after EPA released the endangerment finding, it received 10 administrative petitions asking the Agency to reconsider in light of “Climategate.” The Agency denied the requests for reconsideration in July 2010. See Leora Falk, EPA Dismisses Petitions Challenging Science, Procedural Basis for Endangerment Finding, 41 Env’t Rep. (BNA) 1690 (July 30, 2010) (stating that EPA denied petitions challenging regulations based on “Climategate”).
finding in the rule, litigants will probably argue, among other things, that emissions from new vehicles in the United States represent only a small portion of global emissions and, therefore, EPA cannot reasonably conclude that they “cause or contribute” to climate change within the context of the Act.

Finally, some parties will probably challenge the process used to adopt the endangerment finding. The U.S. Chamber of Commerce criticized EPA for not using a formal hearing overseen by an administrative law judge to determine the facts.69 Others may suggest that EPA should not have issued the endangerment finding without at the same time releasing the tailpipe standards that follow from it, and that EPA should have provided much more time for comment on such a data-intensive and important rule.

Almost all of the states and industries challenging the endangerment finding also filed suit against the tailpipe standards and the triggering rule, with many of the same interveners for and against EPA.70 The tailoring rule is also subject to extensive challenge, not only from the industry and state coalitions, but also from some environmental groups who disagree with EPA’s effort to reduce the number of facilities that must obtain permits for greenhouse gas emissions.71

The lawsuits raise interesting justiciability questions. The endangerment finding itself imposes no obligations on any regulated entity and, thus, may not be ripe for judicial review. In addition, many of the litigants may not have standing to challenge one or more of the rules. Parties challenging the tailpipe standards, for example, include power plants, portland cement facilities, and mining companies—none of which manufacture automobiles.72 Similarly, the tailoring rule, which exempts certain facilities from permitting requirements, is being challenged by industries not exempt under the rule, who would have to rely on “competitor standing” doctrines to support their cases.73 Hence, EPA or the environmental interveners may move to dismiss many of the petitioners.

69. Steven D. Cook, Chamber of Commerce Petitions EPA for Formal Hearing on Endangerment, 40 Env’t Rep. (BNA) 1495 (June 26, 2009).
73. See, e.g., Honeywell Int’l, Inc. v. EPA, 374 F.3d 1363, 1370–71 (D.C. Cir. 2004) (stating that a manufacturer’s competitive interests satisfied standing requirements to challenge EPA’s rule).
All the lawsuits are being heard by the D.C. Circuit, which has extensive experience governing such complex regulatory cases.\textsuperscript{74} The industry challengers urged the court to consolidate all four major topics into one large case.\textsuperscript{75} While the court declined to go that far, it did urge the parties to work out schedules for filing dispositive motions and merits briefs, along with a format for oral argument that would efficiently deal with the overlapping issues among the various cases.\textsuperscript{76} The time necessary for that wrangling and for writing lengthy briefs means that the court will not hear arguments for several months, and a final ruling could take a year or more.

The litigation is leading to substantial uncertainty in the implementation of federal climate change policy. Although the D.C. Circuit denied requests to stay EPA’s four greenhouse gas rules while the cases proceed, the court could eventually invalidate the rules entirely. If the judges vacate the endangerment finding, then the tailpipe standards, which depend on that key finding, would also necessarily fail. Furthermore, if the tailpipe standards were invalidated—on their own merits or because of a faulty endangerment finding—then greenhouse gases would not be “subject to regulation” under the PSD program, and there would be no basis for the tailored rule or triggering rule. Thus, although industries, state agencies, and EPA are currently implementing the greenhouse gas rules, they approach the regulations with some hesitancy, as the current regulatory regime may change substantially in the future.\textsuperscript{77}

\textsuperscript{74} See, e.g., General Elec. Co. v. EPA, 53 F.3d 1324 (D.C. Cir. 1995) (adjudicating a challenge to EPA’s interpretation of a complex regulatory scheme).  
\textsuperscript{75} Steven D. Cook, \textit{EPA Opposes Industry Motion to Combine Mobile, Stationary Greenhouse Gas Cases}, 41 Env’t Rep. (BNA) 2060 (Sept. 17, 2010).  
\textsuperscript{77} Judicial challenges are not the only development creating uncertainty. In the last year, various resolutions and bills have been introduced on Capitol Hill to limit and delay EPA’s authority over greenhouse gases. None has passed so far, but the legislature continues to watch EPA closely. See, e.g., Steven D. Cook, \textit{Senate Rejects Murkowski Resolution Aimed at Halting Greenhouse Gas Rules}, 41 Env’t Rep. (BNA) 1291 (June 11, 2010) (discussing Senate rejection of a resolution that would nullify EPA rules on motor vehicle emissions); Steven D. Cook and Dean Scott, \textit{Obama Would Veto a Bill to Delay EPA Limits on Greenhouse Gas, White House Aide Says}, 41 Env’t Rep. (BNA) 1692 (July 30, 2010).
CONCLUSION

Judicial review of agency actions offers advantages and disadvantages. Without lawsuits, EPA would not have been forced by the Supreme Court’s Massachusetts decision to address greenhouse gases under the Clean Air Act. Yet, the same ability to sue EPA means that implementation of the Agency’s new greenhouse gas rules ultimately may be halted. Without such independent judicial oversight, by contrast, Chinese energy and climate policy moves forward far more quickly.
INTRODUCTION

In the past three decades, China’s miraculous economic growth and rapid development has produced severe environmental pollution and natural resource degradation. Take water pollution as an example. China’s Ministry of Environmental Protection’s 2010 Official Report on China’s Environment revealed that all seven major rivers in China suffer from...
moderate pollution. The report also found that ten out of the twenty-six lakes and reservoirs under the central government’s strict supervision have a water quality graded less than five, the lowest national standard for water quality. This grade means the water is essentially unusable for any purpose. By 2011, there are still over 100 million people living in the countryside that have no access to clean drinking water.

To address the alarming environmental problems in China, the Standing Committee of the National People’s Congress adopted the Environmental Protection Law (for Trial Implementation) in 1979. This was the basic framework law that signified the beginning of environmental legislation in modern China. The mid-1980s witnessed the early development of China’s environmental legislations, but China’s environmental regulatory framework started to expand at an unprecedented pace in the early 1990s. Since then, numerous environmental laws, regulations, rules, and standards have been enacted or amended every year. However, these new laws have done little to improve China’s environmental performance and the environmental quality continues to deteriorate because substantial gaps exist between law on the books and enforcement on the ground. Insufficient enforcement of environmental law, including lack of procuratorate involvement in civil judicial enforcement efforts, continues to be one of China’s key challenges to environmental governance.

This article will first give an overview of China’s procuratorate system, followed by a close examination of the procuratorate’s role in environmental protection. Part III will discuss one specific environmental civil enforcement case brought by the procuratorate to illustrate some of the

2. Id. at 14.
unique issues related to procuratorial civil enforcement. The article will conclude with a brief analysis of the challenges the Chinese procuratorate faces when taking environmental civil enforcement actions. Despite the challenges, the procuratorate’s activism in environmental civil enforcement will have positive implications upon China’s environmental governance and rule of law development.

I. OVERVIEW OF CHINA’S PROCURATORATE SYSTEM

Modern China is, in form, a unitary state, and all power flows from the central government in Beijing. However, the economic reform has brought significant decentralization of economic administration, and Beijing, in many cases, has not been able to effectively rein in local government power, leading to substantial de facto local government autonomy. The modern Chinese government system has not adopted American-style ideas of separation of powers as a form of “checks and balances” between different branches of government. This is due to the belief that disagreements and conflicts between governmental branches should be minimized because efficiency prevails in a socialist state like China. Instead, China’s central government more resembles the parliamentary systems common in Europe.

The Chinese Constitution stipulates that all power in the People’s Republic of China (the PRC) belongs to the people, and the National People's Congress (the NPC) and the local people's congresses at various levels are the organs through which the people exercise the state power. The NPC enjoys extensive power to: amend the Constitution; enact basic laws governing criminal offences, civil affairs, the state organs and other matters; and elect the President of the nation, the Premier of the State Council, the Chairman of the Central Military Commission, the President of the Supreme People’s Court, and the Prosecutor-General of the Supreme People’s Procuratorate. Despite having broad power, the NPC has a large number of delegates and meets only once a year for a few weeks, and this arrangement has essentially prevented the NPC from effectively exercising

---

its stipulated supreme power. To ensure the proper functioning of the legislative branch, the Constitution establishes the Standing Committee of the NPC (the SCNPC) as a permanent body of the NPC. The SCNPC enjoys broad power, including interpreting the Constitution and laws, as well as enacting and amending laws—with the exception of those which should be enacted by the NPC. In the environmental field, the SCNPC and the Environment and Natural Resources Protection Committee of the NPC play an important role in making, revising, and interpreting environmental statutes, inspecting the implementation of environmental laws, as well as supervising the work of environmental protection agencies, the courts and the procuratorates.

The State Council, considered China’s executive branch, is designated by the Constitution as the highest organ of state administration. The State Council has various ministries, commissions, and agencies under it, including the Ministry of Environmental Protection (China’s equivalent of the Environmental Protection Agency in the U.S.) and the Ministry of Justice. The Ministry of Justice is responsible for administering prisons; supervising the People’s Mediation Committees, the lawyer system and the notary system; managing legal education and training of judicial officials; and otherwise disseminating legal knowledge.

The Chinese procuratorate system bears strong influence from Russia, but important differences exist. The Chinese procuratorate is tasked with conducting prosecution in criminal cases on behalf of the state and supervising the activities of public security agencies and courts, while Russia’s procuratorate could extend supervision over the lower and intermediate executive organs. The Russian procuratorate is also highly centralized and free from all interference from local authorities, while Chinese procuratorate is under the dual leadership of both the superior procuratorate and the local people’s congress and government. Although Chinese procuratorates are under dual leadership, the local governments at

15. Jingjing Liu, Overview of the Chinese Legal System, ENVTL. L. REP. (Oct. 2011). The Ministry of Justice is an essential component of China’s judicial system. Although it shares a similar name with the Department of Justice (DOJ) in the U.S., the Supreme People’s Procuratorate in China is considered the functional equivalent to the DOJ given both of them are the national prosecutorial agencies.
the same level control the appointment and finance of the procuratorates; therefore, the superior procuratorate’s leadership is actually rather weak.17 Given the procuratorate’s reliance on the local government at the same level, some argue that the procuratorate’s environmental civil enforcement actions may still be subject to local protectionism.18

The procuratorate system has a structure similar to the courts. The Supreme People’s Procuratorate sits at the top of the prosecutorial system and directs the work of the procuratorates at lower levels.19 Under the Supreme People's Procuratorate, there are procuratorates at the provincial, municipal/prefectural, and district/county level. In addition to these general procuratorates, there are also specialized procuratorates, such as railway transportation and military procuratorates, established within the military system to ensure utmost confidentiality.

Within a procuratorate, there is one prosecutor-general and several deputy prosecutors-general as well as prosecutors. The prosecutor-general is in charge of his or her procuratorate. A prosecutorial committee should be established at a procuratorate at any level.20 The prosecutorial committee shall comprise the prosecutor-general, deputy prosecutors-general, full time committee members and persons in charge of relevant internal organs of the procuratorate.21 The prosecutorial committee discusses and decides important cases and other important issues. The prosecutorial committee’s various functions include deliberating and deciding important issues concerning the implementation of national laws and policies, resolutions passed by the same-level people’s congresses and their standing committees; and important, difficult and complicated cases.22 The prosecutorial committee makes decisions by a majority vote,23 and its decision is legally

21.  (人民检察院检察委员会组织条例) [Organic Regulation of the Prosecutorial Committee of the People’s Procuratorate] (promulgated by the Prosecutorial Commn. of the Supreme People’s Procuratorate, Feb. 2, 2008, effective Feb 2, 2008), art. 2 (China); Organic Regulation of the Prosecutorial Committee of the People’s Procuratorate (promulgated by the Prosecutorial Commn. of the Supreme People’s Procuratorate, Feb. 2, 2008, effective Feb 2, 2008), art. 2 (China).
22.  Id. at art. 4.
23.  Id. at art. 11.
binding. The prosecutorial committee’s decision making process has met criticism. Criticism includes that the committee members are busy and sometimes have no time to review the entire case file; they often vote based on limited knowledge of the case, sometimes using just a report from the prosecutors. There is also criticism that committee members may lack substantive legal knowledge in some of the important, difficult, and complicated cases that come before them, and, therefore, cannot express their ideas effectively and vote in a meaningful way.

China’s procuratorate performs the following major functions:

1. Exercise procuratorial authority over treason, crimes that dismember the State and other major crimes that severely impede the unified enforcement of national policies, laws, decrees and administrative orders;
2. Investigate criminal cases handled directly by the procuratorate;
3. Review cases investigated by the police and determine whether to approve the arrest, to prosecute or to exempt from prosecution; and supervise the legality of the police’s investigation activities;
4. Initiate prosecution of criminal cases, and supervise the legality of trials of criminal cases;
5. Supervise the execution of criminal judgments, and the legality of prison, detention facility, and reform-through-labor institution activities; and
6. Supervise civil and administrative trials of courts.

---

24. Id. at art. 5.

Unlike public prosecutors in Western legal systems, the Chinese procuratorate’s functions are not confined to prosecutorial work. Chinese procuratorates enjoy extensive power to not only conduct criminal investigations and prosecutions, but also exercise supervision of the police, prisons, and even the courts to ensure their activities conform to law. Chinese procuratorates’ power to supervise criminal, civil, and administrative trials is, to a certain degree, unthinkable to American prosecutors and judges, given the country’s adversarial trial model.

II. CHINESE PROCURATORATE’S ROLE IN ENVIRONMENTAL PROTECTION

Within the environmental arena, the procuratorate is responsible for investigating and prosecuting environmental crimes, including those related to dereliction of environmental protection and supervision duties. The procuratorate also supervises the work of the environmental protection agencies and public security authorities relating to environmental crime. The 2010 Annual Work Report of the Supreme People’s Procuratorate reports that the procuratorates cracked down on crimes related to damaging the environment and natural resources in 2009. The procuratorates prosecuted 15,137 people for illegal mining, illegal logging, or causing major environmental pollution accidents. The procuratorates also dealt with crimes involving dereliction of duties to protect energy resources and the ecological environment. The procuratorates investigated 2,966 dereliction of duty cases related to illegal approval of land taking and environmental supervision. Although the 15,137 people prosecuted for environmental crimes accounted for only a fraction of the 1,134,380 people prosecuted for all types of crimes in 2009, the number for environmental crime prosecutions will likely go up after an amendment to the Criminal Law lowering the threshold for prosecuting environmental crimes passed the SCNPC in February 2011.

---

28. The 2010 annual work report of the Supreme People’s Procuratorate.
29. Id. The small number of people prosecuted for environmental crimes to certain degree reflected a traditional notion in China that people should not be punished criminally for activities damaging the environment.
In addition to prosecuting environmental crimes and dealing with dereliction of environmental protection and supervision duties, the procuratorates play an active role in protecting the environment through non-criminal approaches. These include filing civil lawsuits affiliated with criminal prosecution, protesting against incorrect civil and administrative judgments, providing prosecutorial advice, supporting litigation, supervising and urging litigation, and bringing environmental civil enforcement litigation.

(China). On February 25th, 2011, the SCNPC passed the eighth amendment to the Criminal Law of the PRC. Before the eighth amendment, art.338 of the Criminal Law read as:

whoever releases, dumps, or disposes of radioactive wastes, wastes containing pathogen of contagious diseases, and toxic materials or other dangerous wastes into land, water, and the atmosphere in violation of state stipulations, causing major environmental pollution accidents that lead to heavy losses to public and private property, or grave consequences of personal deaths and injuries shall be sentenced to not more than three years of fixed-term imprisonment or criminal detention, and may in addition or exclusively be sentenced to a fine; and in exceptionally serious consequences, not less than three years and not more than seven years of fixed-term imprisonment, and a fine.

Id. In the eighth amendment, Article 338 has been revised to:

whoever, in violation of the state provisions, discharges, dumps or disposes of any radioactive waste, any waste containing pathogens of any infectious disease, any poisonous substance or any other hazardous substance, which has caused serious environmental pollution, shall be sentenced to imprisonment of not more than three years or criminal detention and/or a fine; or if there are especially serious consequences, be sentenced to imprisonment of not less than three years but not more than seven years and a fine.

Id. In revised Article 338, “causing major environmental pollution accidents that lead to heavy losses to public and private property, or grave consequences of personal deaths and injuries” is no longer necessary for prosecuting environmental crimes, and as long as there is serious environmental pollution, it is sufficient to prosecute criminally.

31. In China, the widely used terminology for describing non-criminal litigations brought against polluters or environmental agencies who do not perform their statutorily mandated obligations is “environmental public interest litigation.” If the defendants are not government agencies, then the lawsuits are called “civil environmental public interest litigation”; if the defendants are government agencies, then the lawsuits are called “administrative environmental public interest litigation.” To be more specific, civil environmental public interest litigation refers to civil lawsuits brought by environmental NGOs, environmental agencies, and the procuratorates against polluters for the interests of the public as compared to for the private interests in an environmental tort lawsuit. Civil environmental public interest litigation brought by the NGOs against the polluters shares some similarities as well as substantial differences with the “citizen suit” in the U.S, while civil environmental public interest litigation brought by the procuratorates against polluters is quite comparable to the civil enforcement action taken by the DOJ’s Environment and Natural Resources Division and the 94 U.S. attorneys offices located across the U.S., albeit with some important differences as well. For the purpose of writing this article, civil environmental public interest litigation brought by the procuratorates against polluters will be used interchangeably with environmental civil enforcement litigation.
A. Filing Civil Lawsuits Affiliated with Criminal Prosecution

According to China’s criminal procedure law, if state property or collective property is damaged due to criminal activities, then the procuratorate may file a civil lawsuit affiliated with criminal prosecution. For example, Yuncheng Municipal People’s Procuratorate of Shanxi Province brought a criminal prosecution against Junwu Yang, a paper mill owner, in 1998 for causing major environmental pollution accidents. At the same time, it brought an affiliated civil lawsuit against the defendant for causing pollution to public drinking water sources. The Yuncheng Municipal People’s Court imposed a two-year fixed-term imprisonment against the defendant and a criminal penalty of 50,000 RMB (around $7,692). The court also ordered the defendant to pay 360,000 RMB (around $55,385) to compensate the civil loss.

In another case, five defendants dumped 6,500 tons of sludge from a wastewater treatment facility into Beijing’s underground water source protection zone. The sludge contained multiple heavy metals and high concentrations of pollutants, which caused serious pollution to the local air, soil, and underground water. The economic loss as a result of the pollution was assessed for over 100 million RMB (around 15 million USD). This was the first sludge pollution case in China, as well as the biggest underground water pollution case in Beijing. In addition to bringing criminal prosecution against the defendants for causing a major environmental pollution accident, Beijing Mentougou District People’s Procuratorate brought an affiliated civil lawsuit requesting 80 million RMB (around 12 million USD) for civil compensation. This was the first time a procuratorate sued defendants for such a large amount of civil compensation in Beijing.

B. Protesting Against Incorrect Civil and Administrative Judgments

As mentioned above, according to China’s civil procedure law and administrative procedure law, the procuratorates have the right to exercise

---


legal supervision over the civil and administrative proceedings. If the Supreme People’s Procuratorate discovers that a people’s court made a legally effective civil judgment at any level, or if a people’s procuratorate at a higher level discovers that a legally effective judgment made by a people’s court at a lower level involves any statutorily provided circumstances, then the Supreme People’s Procuratorate or the people’s procuratorate at a higher level shall file a protest. If a local people’s procuratorate at any level discovers that a legally effective judgment made by a people’s court at the same level involves any statutorily provided circumstances, then the people’s procuratorate shall ask its superior procuratorate to file a protest with the people’s court at the same level.\(^{35}\)

The system of protest by the procuratorate was transplanted from the former Soviet system of civil process where the chief procurator may protest against unlawful or unjustified judgments regardless of whether he participated in adjudicating the case.\(^{36}\) Statutorily provided circumstances usually include incorrect verification of facts, incorrect application of laws, and violation of due process.\(^{37}\)


1. There is new evidence which is conclusive enough to overrule the original judgment or ruling;
2. The main evidence used in the original judgment to find the facts was insufficient;
3. The main evidence used in the original judgment to find the facts was forged;
4. The main evidence used in the original judgment to find the facts was not cross-examined;
5. Any party to a lawsuit is unable to obtain the evidence necessary for adjudicating the case because of some realistic reasons and has applied to the people’s court for investigation and collection of such evidence in writing, but the people’s court fails to investigate and collect such evidence;
6. There was an error in the application of the law in the original judgment;
7. The jurisdiction was in violation of legal provisions and was improper;
Chinese procuratorates protested against 11,556 incorrect civil and administrative judgments in 2009, and 12,139 in 2010, respectively.\(^{38}\) With the powers authorized by these two procedural laws, if a procuratorate discovers an incorrect civil or administrative judgment (e.g., a wrong decision on an environmental tort case or incorrect judicial review of an administrative action), then it can protest the judgment to the proper court, and the court will initiate the retrial process.\(^{39}\) When the court hears the case protested by the procuratorate, it shall notify the procuratorate to send a prosecutor to attend the court hearing.\(^{40}\)

C. Providing Prosecutorial Advice

Prosecutorial advice is an important means employed by the procuratorate to promote correct implementation of law. During the process of enforcing the law and handling cases, the procuratorate exercises its legal supervisory authorities and advises relevant entities. The procuratorate advises entities to improve their bylaws and internal supervision, to correctly implement laws and regulations, and to prevent and reduce violations of the law.\(^{41}\) The procuratorate may give prosecutorial advice to

\(^{38}\) The trial organization was unlawfully formed or the judges who should withdraw have not done so;
\(^{39}\) The person incapable of action is not represented by a legal agent, or the party that should participate in the litigation failed to do so because of the reasons not attributable to himself or his legal agent;
\(^{40}\) The party’s right to debate was deprived of in violation of the law;
\(^{41}\) The default judgment in the absence of the party was made whereas that party was not served with summons;
\(^{13}\) Some claims were omitted or exceeded in the original judgment; or
\(^{12}\) The legal document on which the original judgment was made is cancelled or revised.

*Id.* With respect to a violation of the legal procedure by a people’s court that may have affected the correctness of the judgment of the case or the situation that judges involved themselves in any conduct of embezzlement, bribery, practicing favoritism for himself or relatives, or twisting the law in rendering judgment, the people’s court shall retry the case.

41. Work Procedures for the People’s Procuratorate to Issue Prosecutorial Advice (for Trial Implementation) (2009), art.1.
the entities involved in cases handled by the procuratorate, relevant administrative agencies, and other relevant entities.\textsuperscript{42}

A procuratorate may issue prosecutorial advice if it discovers:

1. Hidden risks of crime as a result of poor management, lack of sound bylaws, or failure to implement relevant bylaws;
2. Administrative agencies in charge of certain industries need to strengthen or improve the management and supervision of the industries or sectors;
3. Civil disputes are serious and may escalate into severe or mass incidents, and mediation needs to be strengthened to control the situation; and
4. It is necessary to improve the law enforcement work of the courts, the public security authorities, criminal punishment enforcement agencies, etc.\textsuperscript{43}

Prosecutorial advice usually includes:

1. Explanation of the root cause of the problem or the reason for issuing the advice;
2. A description of the hidden risks or violation of the law that should be eliminated;
3. Proposed solutions to the problem;
4. The facts, laws, regulations and other provisions that the procuratorate relies upon to issue the advice; and
5. The time limit within which the advised entity shall send a written reply regarding the implementation of the advice.\textsuperscript{44}

For example, in early 2004, Yanjiang District People's Procuratorate of Ziyang Municipality, Sichuan Province (Yanjiang Procuratorate) learned that many stone processing factories along the local Qingshui River basin in Yanjiang District discharged crushed stones and stone slurries directly to

\textsuperscript{42} Work Procedures for the People's Procuratorate to Issue Prosecutorial Advice (for Trial Implementation) (2009), art.3.
\textsuperscript{43} Work Procedures for the People's Procuratorate to Issue Prosecutorial Advice (for Trial Implementation) (2009), art.5.
\textsuperscript{44} Work Procedures for the People's Procuratorate to Issue Prosecutorial Advice (for Trial Implementation) (2009), art.4.
the Qingshui River watershed.\textsuperscript{45} This caused significant damage to the environment along the river and threatened the local water supply. Two-thousand residents living along the river had difficulty accessing clean water. Yanjiang Procuratorate contacted the local environmental protection bureau (EPB) and discovered that the EPB had previously issued administrative orders requiring these factories to stop production and rectify pollution activities. Many factories, however, turned a deaf ear to the EPB’s orders because of the huge profits they could earn from direct discharge of pollutants to the river. In May, Yanjiang Procuratorate issued prosecutorial advice to eight major stone processing factories along the River, recommending these factories install or improve their pollution treatment facilities and clean up the river choked by pollutants. Yanjiang Procuratorate made it clear in its prosecutorial advice that if its recommendations went unheeded, it would bring civil enforcement lawsuits against these factories. The procuratorial advice received significant attention from these factories as well as the local government agencies in charge of supervising them. The factories either stopped production to install or improve pollution treatment facilities, or faced closure if they could not do so. The Qingshui River pollution was therefore managed and treated as a whole.

\textit{D. Supporting Litigation}

Supporting litigation is an important principle of China’s civil procedure law. If the civil rights and interests of the state, collective, or individual have been infringed upon, a state agency, public organization, enterprise, or institution may support the injured unit or individual to bring a lawsuit.\textsuperscript{46} Sometimes, for certain reasons,\textsuperscript{47} victims of a tortious action may not take the claim to court. In such cases, a procuratorate can step in to support victims to bring lawsuits to ensure justice is served. For example, in 2007, a cupboard factory in Nanhu District of Jiaxing Municipality,

---

\textsuperscript{45} Dehua Liu, Min Jiang & Mingsheng Qing, \textit{Facing Lawsuits if No Cleanup Action is Taken! Prosecutorial Advice Gives Back a Clean Qingshui River}, \textit{PROCURATORIAL DAILY}, May 11, 2005, http://www.jcrb.com/n1/jcrb807/ca371535.htm. The following is a summary of this case.


\textsuperscript{47} Several reasons include: not being aware of the available remedies through litigation, lack of financial resources, and fear of the party conducting the tortious action, etc.
Zhejiang Province, discharged wastewater coming from the manufacturing process directly to a local river and caused massive death of fish raised by local farmers. The factory also discharged large amounts of dusts and exhaust gases, which had serious environmental consequences for local residents. It turned out that this factory did not apply for any pollution discharge permit, nor did it install any basic wastewater treatment facility around the factory. Local residents made a complaint to the Nanhu District EPB, which ordered the factory to stop production in March 2008, complete the permit application procedures, and install a proper pollution control facility. Nanhu District EPB’s order was ignored and the factory continued to manufacture cupboards without a permit and pollution control facility.

In July 2009, Nanhu District People’s Procuratorate (Nanhu Procuratorate) and Nanhu District EPB jointly promulgated Provisions on Environmental Protection Public Interest Litigation. The Provisions stipulated that, in environmental pollution cases, the procuratorate could follow relevant civil procedure rules to support pollution victims to bring litigation, supervise and urge relevant government agencies or state-owned units to bring litigation, or bring its own civil enforcement litigation. According to the Provisions, Nanhu District EPB transferred the cupboard factory case to Nanhu Procuratorate in December 2009. The procuratorate initiated an investigation into this case immediately, and, based on the investigation and relevant laws, decided to support local residents to bring a lawsuit against this factory. During the process of collecting evidence, the prosecutor educated the factory owner on relevant laws and made him realize the illegality of the factory’s pollution discharge activities. The factory owner therefore promised to dismantle all manufacturing equipment and relocate his factory by January 20, 2010—which he did. He also proposed compensation solutions to the satisfaction of local residents, and, therefore Zhejiang Province’s first environmental public interest litigation supported by the procuratorate was properly settled.

E. Supervising and Urging Litigation

When state-owned assets and public interests are infringed upon, if supervising agencies or state-owned units do not exercise, or keep a slack hand to exercise, their supervisory responsibilities, the procuratorate, as the state’s highest organ for legal supervision, can supervise and urge relevant

48. Yuehong Fan, Zhiwei Shen and Ye Ni, Zhejiang Province’s First Environmental Public Interest Litigation Supported by the Procuratorate is Settled (Feb. 21, 2010, 4:19 PM), http://chinacourt.org/html/article/201002/21/395966.shtml. The following is a summary of this case.
agencies and state-owned units to fulfill their obligations and bring civil lawsuits to protect the legitimate interests of the state and the public. In some areas, such as sale of the rights to use state-owned lands, sale of state-owned assets, and environmental protection, the interests of the state and the public are more susceptible to infringement. These are the areas where the procuratorate can help safeguard against loss of state-owned assets and damage to the environment.

F. Bringing Environmental Civil Enforcement Litigation

Among all available non-criminal approaches the procuratorates can employ to protect the environment, environmental civil enforcement litigation is the most direct and powerful. This has invited significant attention and heated debate.

As mentioned above, Chinese procuratorates, as the constitutionally designated state agency for legal supervision, enjoy extensive power to supervise the police, prisons, and even the courts to ensure their activities conform to law. However, they lack clear authority to bring civil enforcement lawsuits against violators. According to China’s civil procedure law, the plaintiff in a civil lawsuit must be a citizen, legal person, or an organization that has a direct interest with the case. This essentially


50. See Yanmin Cai, The Procuratorate’s Role in China’s Civil Environmental Public Interest Litigation, 1 Peking Univ. L.J. 161, 166 (2011). The PRC’s first Organic Law of the People’s Procuratorate in 1954 stipulated that the procuratorate has the authority to initiate or participate in litigations regarding important civil cases that involve the interests of the state and the people. In addition, in the 1979 draft of the Civil Procedure Law (for Trial Implementation), there were provisions regarding the procuratorate’s participation in civil litigation. However, when the Civil Procedure Law (for Trial Implementation) was passed in 1982, such provisions were deleted due to the belief at that time that the procuratorate should focus on criminal work only.


The following conditions must be met before a lawsuit is filed:

1) The plaintiff must be a citizen, legal person, or an organization having a direct interest with the case;
2) There must be a specific defendant;
3) There must be a concrete claim, a factual basis, and cause for the lawsuit; and
4) The lawsuit must be within the scope of civil lawsuits to be accepted by the people’s courts and within the jurisdiction of the people’s court to which the lawsuit is filed.

Id.
prevents all civil litigations brought on behalf of the public interest. When the Civil Procedure Law was revised in 2007 (after 16 years of operation), there were proposals from legal experts, scholars, and judges calling for relaxing this strict standing requirement to allow for civil litigations brought on behalf of the public interest. Unfortunately, these proposals did not make it to the final amendment. Earlier this year, another revision of the civil procedure law was included in the 2011 legislative plan of the SCNPC. Some legal scholars believe the focus of this second revision will be to enhance the protection of the parties’ right to sue and address issues such as difficulty accessing the court and difficulty collecting relevant evidence, etcetera. The latest draft amendment to the Civil Procedure Law included a provision that allows relevant agencies and social groups to bring lawsuits against activities that damage the public interest, such as environmental pollution, so hope remains for relaxing the standing requirement to include public interest litigation in the new civil procedure law.

In addition, China’s Environmental Protection Law stipulates that units and individuals shall have the obligation to protect the environment and the right to report on or file charges against units or individuals that cause pollution or damage to the environment. However, these are general principles and procedures, lacking mechanisms to properly enforce them. Moreover, “report on” or “file charges against” refers more to internal supervision within government agencies, which is different from bringing environmental litigation, including public interest litigation, in court.


53. The 2007 revision of the Civil Procedure Law focused on improving procedures related to enforcement as well as retrial of a case whose judgment is already legally effective, instead of a comprehensive revision of the entire law. This disappointed many scholars and legal experts who were looking for a more comprehensive revision of the law.

54. This opinion came from Weijian Tang, a law professor at Renmin University of China Law School and leading expert on Chinese civil procedure law. His remarks can be found at http://news.hebei.com.cn/system/2011/06/14/011207817.shtml.


57. Shijun Zhang, Discussion of the System and Type of Qualified Plaintiffs in Environmental Public Interest Litigation in China, 3 J. OF JINAN UNIV. 79, 79 (2007).
Given the ambiguous legal authority to bring civil enforcement actions, except in cases of severe pollution (which may be criminally prosecuted), Chinese prosecutors rarely pursue civil prosecutions in environmental cases because they lack a formal civil judicial enforcement role. However, the legislative setback has never prevented efforts by the procuratorate to expand its functions to play a more active role in protecting the interests of the state and the public. Since the 1990s, procuratorates in the provinces of Henan, Shanxi, Fujian, Shandong, Guizhou, Jiangsu, Zhejiang, Jiangxi, Sichuan, and Guangdong have brought civil litigations to protect state-owned assets, the environment, and the public interest.

Early experiments with bringing civil lawsuits by the procuratorate can be traced back to 1997. The Industrial and Commercial Bureau of Fangcheng County, Henan Province, sold a piece of state-owned property to an individual at a low price in violation of the law. In order to prevent divestment of state property, the Fangcheng County Procuratorate brought a lawsuit requesting that the Fangcheng County court declare the contract invalid. The court ruled in favor of the plaintiff and declared the sales contract between the industrial and commercial bureau and the private individual invalid. The Fangcheng County Procuratorate’s initiative received significant attention from the Supreme People’s Procuratorate, and this case was rated as one of the “Eight Biggest Cases in Ten Years” in China’s procuratorate system.

Despite lack of clear authority under current Chinese law, several local procuratorates have initiated environmental civil enforcement cases since 2003 in maritime courts, specialized environmental courts, and even quite a few general courts.

58. This is consistent with the trend of procuratorates’ expansion of functions around the world.
60. Id.
61. See Liu, supra note 7, at 10888. Maritime courts are specialized courts hearing primarily maritime torts and contract disputes. In recent years, maritime courts were given additional jurisdiction over cases involving land-originated pollutants contaminating the ocean as well as navigable watersheds. It is advantageous for maritime courts to hear ocean and water pollution cases because their specialization in maritime cases has enabled them to accumulate significant experience in hearing ocean and watershed-related pollution cases. In addition, the funding structure of the maritime courts and the fact that their jurisdiction is not defined by administrative districts made the maritime courts relatively insulated from the local governments who can exert substantial influence on judicial independence.
62. See Jingjing Liu & Adam Moser, supra note 5, at 222. Since 2004, several environmental courts have been established in different cities and provinces across China. The establishment of these environmental courts helps streamline the process of hearing environmental cases, allows cases to be heard by judges with enhanced technical expertise, and expands the standing for plaintiffs to facilitate...
III. ANALYSIS OF ISSUES RELATED TO ENVIRONMENTAL CIVIL ENFORCEMENT ACTIONS TAKEN BY THE PROCURATORATE

This section will discuss a specific environmental civil enforcement case brought by a local procuratorate, and use it as an example to discuss some of the unique issues related to prosecutorial civil enforcement.

A. The People’s Procuratorate of Haizhu District of Guangzhou Municipality v. Zhongming CHEN

Defendant Zhongming CHEN opened a laundry facility (Xin Zhong Xing) in the Haizhu District of Guangzhou Municipality in September 2007, without obtaining either a valid business license from the local industrial and commercial bureau or a pollution discharge permit from the local EPB. When conducting the laundry business, the facility used several detergents, including laundry soap powder, ferment power, and oxalic acid, which mixed with dye in the clothes being washed. The wastewater produced at the end of the laundry process was channeled to a collecting tank in the facility for simple deposition and was then discharged directly into Shi Liu Gang River. Since the wastewater was not properly treated before discharge, the pollutants in the wastewater caused severe pollution to this small river, which used to be clean and clear. After noticing a black coloration and a noxious odor emanating from the river, local residents went to the facility to complain. The facility denied discharging any pollution to the river and turned a deaf ear to the residents’ complaints.

After learning of this pollution from local residents, the Haizhu District People’s Procuratorate (Haizhu Procuratorate), a nationally acclaimed basic-level procuratorate that won many top awards within the environmental public interest litigation that regular courts generally would not accept under existing Chinese law.

63. No. 382 Verdict of Guangzhou Maritime Court for First Instance Trial (2008).
64. Id.
66. Id. The chief of the civil and administrative division of the Haizhu Procuratorate and also the chief prosecutor in this case, Mr. Chaohong Liang, learned about the pollution by the laundry facility when he conducted a routine visit to this community within the jurisdiction of the Haizhu Procuratorate to hear the voices of local residents. During this visit several local residents asked him whether the procuratorate will deal with river pollution in addition to arresting corrupt officials.
procuratorate system, decided to act as the plaintiff and bring a civil lawsuit against the owner of the facility, Zhongming Chen, in July 2008. The plaintiff requested compensation of 117,289.20 RMB (approximately $18,000) for the environmental impacts and economic losses caused by the illegal discharge and payment of a case acceptance fee by the defendant. The Guangzhou Maritime Court heard this case in November 2008, and, in December 2008, ordered the defendant to pay the case acceptance fee of 2,646 RMB and to pay the full amount of 117,289.20 RMB to the national treasury to be used exclusively for pollution treatment of the Shi Liu Gang River. After the judgment became effective, defendant Zhongming Chen closed the laundry facility and left Guangzhou. Today, Shi Liu Gang River is clean again and has beautiful scenery for local residents to enjoy.

After this case, several local procuratorates in Guangdong Province brought environmental civil enforcement cases in the Guangzhou Maritime Court, as well as regular courts. The fact that regular courts, in addition to the maritime court, continue to accept environmental civil enforcement cases shows the precedential value of the Xin Zhong Xing case. This trend promises robust development of environmental civil enforcement actions in Guangdong Province.

There are several interesting issues coming out of this successful lawsuit brought by the Haizhu Procuratorate. Many of the same issues exist in environmental civil enforcement actions taken by procuratorates in other parts of China.

First, despite ambiguous legislative authorization, this is the first environmental civil enforcement case in Guangdong Province. There were two major reasons leading to Haizhu Procuratorate’s decision to bring this case. One is the ineffectiveness of administrative actions. After receiving complaints from local residents about the deterioration of Shi Liu Gang River, the local EPB investigated all the factories along the river and discovered the pollution discharge activities of the Xin Zhong Xing laundry system.

---

67. The Haizhu Procuratorate was awarded the title of the National Model Procuratorate in 2001, and, in 2002, was awarded the title of the National Model Basic-Level Procuratorate by the Supreme People’s Procuratorate, and, in 2005, was awarded the title of Top Ten Procuratorates in China.

68. See No. 382 Verdict of Guangzhou Maritime Court for First Instance Trial (2008). This included a monitoring fee of 7,806 RMB, a defaulted water resources fee of 312 RMB, and compensation of 109,171.20 RMB for causing environmental harm and economic losses.

69. Id.

70. It is particularly encouraging that regular courts have started to take environmental civil enforcement cases. Ultimately, this type of cases should be accepted by all courts across China, not just by a few maritime courts and specialized environmental courts.
However, the EPB could only issue a warning, impose a fine, or order the facility to stop production and install proper pollution treatment facilities. As mentioned in some of the previous cases, such administrative actions have had little effect upon the polluters. In order to ensure Xin Zhong Xing and its owner were held responsible for the environmental harm the facility caused and to change the pattern of weak administrative enforcement, the EPB discussed with Haizhu Procuratorate the possibility for the latter to bring a judicial enforcement action against Xin Zhong Xing as an experiment to develop new enforcement tools.

After taking the case, Haizhu Procuratorate and Haizhu District EPB signed implementing measures to conduct joint public interest litigation concerning land-originated pollutants that are contaminating watersheds. These measures stipulate that when Haizhu District EPB conducts environmental supervision and management, it is responsible for discovering and providing cases, assisting Haizhu Procuratorate in collecting relevant technical data and assessment materials required for litigation, and assisting in other work required for litigation. Following in the footsteps of Haizhu Procuratorate and Haizhu District EPB, procuratorates in Guangzhou Municipality, as well as several other provinces, issued implementing measures with the EPBs at the same level to facilitate better cooperation in promoting public interest litigation, particularly case transfers, joint investigations, evidence collection, etcetera.

The other reason Haizhu Procuratorate brought this civil enforcement action was that it believed such an action would have a long-term

---

72. Id.
73. Sometimes the polluters may pay a fine, but refuse to install pollution treatment facilities because the costs of installing such facilities are much higher than simply paying a fine; at other times, the polluters simply ignore the EPB’s orders. While the EPB could potentially request the court to enforce its orders, the outcome of such request depends entirely upon the court.
74. Deng, supra note 71.
educational function. The defendant, Xin Zhong Xing, was a small, privately owned business. Such small to medium-sized private businesses have played a decisive role in Guangzhou’s economic development. By taking civil enforcement action against this defendant for damaging the environment, the small and medium-sized business community will be pushed to improve its environmental awareness, and ultimately will promote economically and socially sustainable development. The educational function of this case cannot be ignored; however, it should also be noted that, because this was the first environmental civil enforcement case in Guangdong Province and its judgment will be used by millions of people to evaluate the current strength and future ability to initiate environmental civil enforcement actions, Haizhu Procuratorate had significant interest in the outcome of the case. Given that the defendant was a small privately owned business, rather than a multinational corporation or state-owned enterprise with greater financial resources to devote to the case, and that the facts of this case were quite straightforward, Haizhu Procuratorate was heavily favored to win, and did.

Many of the environmental civil enforcement cases brought by procuratorates in other parts of China share similar traits when it comes to the types of defendants and violations prosecuted. Most of these cases had relatively clear facts supported by strong evidence from the procuratorates, and involved defendants that were usually individuals or small to medium-sized, privately owned businesses. The result is that procuratorates won or reached settlement agreements in all of the environmental civil enforcement cases brought so far. This may give the appearance that the procuratorates are doing “selective enforcement” or misusing public resources. However, environmental civil enforcement is a new initiative and the procuratorates need to go step-by-step to learn and explore all aspects of it. It is hoped that, after a period of accumulating experience, the procuratorates will be able to take on bigger, more complicated, and more controversial environmental civil enforcement cases.

Second, there was communication prior to trial between the procuratorate and the court regarding case acceptance. Since Haizhu Procuratorate is a basic-level procuratorate and Guangzhou Maritime Court is an intermediate-level court, it may have needed Guangzhou Municipal

78. Maritime courts have only one level, equivalent to that of intermediate-level courts. Their decisions can be appealed to the high courts of the provinces where the maritime courts are located.
People’s Procuratorate, Haizhu Procuratorate’s superior, to bring the case at Guangzhou Maritime Court to ensure equity in the levels of the procuratorate and the court in the same case. Haizhu Procuratorate communicated this concern to Guangzhou Maritime Court, who decided it was not a problem for Haizhu Procuratorate to bring this case given that it was not considered significant or complicated enough to require the involvement of Guangzhou Municipal People’s Procuratorate. 79 More important is the issue of communication regarding whether the court would actually accept this case despite a legislative requirement that the plaintiff in a civil case must have direct interest with the case. Such communications, clearly ex parte by American standards, exist in many of the civil enforcement cases brought by the procuratorates, and sometimes are essential to ensure acceptance of such cases by the courts.

To a certain degree, procuratorates’ initiation of civil enforcement actions under the existing legislative framework involves balancing the relationship between the procuratorate and the court. Even within the senior leadership of the Supreme People’s Court, there were contrasting views towards such prosecutorial activism. 80 In 2006, Vice President Zelin Su of the Supreme People’s Court wrote, “in recent years there are cases in which the procuratorates, as the state’s legal supervision agency, brought civil lawsuits as plaintiffs; for these types of lawsuits, currently the people’s courts have no legal basis to accept them.” 81 On the other hand, another vice president of the Supreme People’s Court, Er’xiang Wan, has submitted legislative proposals or made appeals for establishing civil environmental public interest litigation during the annual meetings of the NPC and the Chinese People’s Political Consultative Conference every year since 2009. Despite different opinions within the senior leadership of the Supreme People’s Court, local courts, in practice, not only accept environmental civil cases brought by the procuratorate, but also rule in favor of the procuratorates or help the procuratorates and the other parties reach settlements that are in compliance with the law. This conveys the courts’ recognition and support of the environmental civil enforcement initiatives from the procuratorates. 82

---

80. Yanmin Cai, supra note 50, at 162
82. Yanmin Cai, supra note 50, at 162.
Third, in the Xin Zhong Xing case there was no challenge regarding the standing of Haizhu Procuratorate as the plaintiff. In this case, defendant Zhongmin Chen did not attend the court hearing and certainly did not challenge the plaintiff’s standing. The Guangzhou Maritime Court ruled that:

[A]s the state agency for legal supervision, the procuratorate’s functions include protecting state assets and resources from damages by illegal activities, and representing the state to bring litigation when state assets and resources are damaged by illegal activities. Since in this case the polluted Shi Liu Gang watershed belongs to state-owned water resources, and since Shi Liu Gang watershed is within the plaintiff’s jurisdiction as well as within this court’s jurisdiction, the plaintiff enjoys standing to sue the damages caused by the defendant’s illegal activities at this court.  

Even though—in this particular case—the defendant was absent and did not challenge the procuratorate’s standing, there have been few challenges to the procuratorate’s standing in many other environmental civil enforcement cases where defendants did appear in court. One reason for this is that defendants are hesitant to challenge the procuratorate, which represents the state and enjoys extensive public power. Another, more important reason is that, despite legislative ambiguity and contrasting views of the Supreme People’s Court regarding procuratorates’ role in environmental civil enforcement, several provinces and cities have issued local regulations, court rules, joint provisions issued by local courts and local procuratorates, and joint provisions issued by local procuratorates.

83. No. 382 Verdict of Guangzhou Maritime Court for First Instance Trial (2008).
84. This is consistent with the Chinese traditional culture that private individuals tend to yield in front of public power, even though these are civil lawsuits in which both parties enjoy equal status.
86. Implementing Opinions of Guiyang Municipal People’s Court and Qingzhen Basic People’s Court Regarding Actively Promoting Environmental Public Interest Litigation and Construction of Ecological Civilization (March 2010, effective March 2010) (China).
and local EPBs\(^{88}\) to give procuratorates standing to bring environmental civil enforcement actions. Such local experiments have shown a bottom-up movement to push the envelope for formally allowing environmental civil enforcement actions.

Fourth, because the defendant in the Xin Zhong Xing case did not attend the court hearing and, therefore, could not possibly discuss settlement options with Haizhu Procuratorate, the case was adjudicated by Guangzhou Maritime Court—which ruled for the plaintiff. However, in other environmental civil enforcement cases brought by procuratorates across China, many were able to reach a mediated agreement under the guidance of the court. This, to a certain degree, is similar to the U.S. experience in which the vast majority of environmental civil enforcement cases are resolved through settlement.\(^{89}\)

There has been heated debate in China over whether environmental civil enforcement cases brought by the procuratorate should be mediated. Opponents’ concerns are twofold. The first is whether the procuratorate, who enjoys extensive public power, can negotiate with a private individual or entity.\(^{90}\) The second is whether mediated agreements between the procuratorate and polluter defendants will tarnish the public interest nature of this type of case.\(^{91}\) However, such opposition is overshadowed by the various benefits a mediated agreement can bring to both parties of an environmental civil enforcement lawsuit,\(^{92}\) as indicated by the extensive application of mediation in this type of case. One thing Chinese procuratorates could learn from their U.S. counterparts is how to use a “public notice and comment” procedure, an important part of the settlement process in the U.S.\(^{93}\) China currently does not have such a mechanism in place, and could benefit from a public notice and comment procedure, which helps ensure that the public interest is not violated during mediation.

Finally, no civil penalty was imposed on the polluter. In the Xin Zhong Xing case, Haizhu Procuratorate requested, and Guangzhou Maritime Court

---

88. Eg., Provisions Regarding Actively Exercising Civil and Administrative Prosecutorial Functions to Improve Environmental Protection, jointly issued by Zhejiang Provincial People’s Procuratorate and Zhejiang Provincial Environmental Protection Bureau in October 2010.
90. Yanmin Cai, supra note 50, at 170.
91. Id.
92. Mediation is consistent with the traditional Chinese legal culture in terms of using extrajudicial means to resolve disputes. It also helps save time and costs and, particularly in environmental cases, helps both parties craft innovative remedies tailored to their needs.
93. Cruden & Gelber, supra note 89, at 16.
ruled, that the defendant pay compensation of 117,289.20 RMB for the environmental harm and economic loss caused by the facility’s illegal discharge. However, Haizhu Procuratorate did not request that the defendant pay a civil penalty, despite the fact that the facility did not have a pollution discharge permit and severely polluted Shi Liu Gang River. This is because existing Chinese law generally does not allow for civil penalty, except in cases of fraud committed against consumers.

This is very different from the U.S. practice that almost all federal environmental statutes provide for civil judicial enforcement to secure civil penalties, in addition to injunctive relief, recovery of government response costs, enforcement of administrative orders, and other relief. Requiring that the defendant pay an appropriate civil penalty for the violation will help educate the defendant and deter further violations. Given that in China the administrative penalty and civil compensation for environmental damages are usually small compared to the profits polluters can make from violating the law, it is particularly meaningful for the law to provide for substantial civil penalties against the violators.

---

94. General Principles of the Civil Law of the People’s Republic of China (promulgated by Nat’l People’s Cong., Apr. 12, 1986, effective Jan. 1, 1987) art. 134 (China). According to Article 134 of the General Principles of the Civil Law, the available civil remedies include:
   (1) cessation of infringements;
   (2) removal of obstacles;
   (3) elimination of dangers;
   (4) return of property;
   (5) restoration of original condition;
   (6) repair, reworking or replacement;
   (7) compensation for losses;
   (8) payment of breach of contract damages;
   (9) elimination of ill effects and rehabilitation of reputation; and
   (10) extension of apology.

95. Law on Protection of Consumer Rights and Interests of the People’s Republic of China (promulgated by the Standing Comm. Of the Nat’l People’s Cong., Oct. 31, 1993, effective Jan. 01, 1994) Art. 49 (China). According to Article 49 of the Law on Protection of Consumer Rights and Interests (1993), business operators engaged in fraudulent activities in supplying commodities or services shall, on the demand of the consumers, increase the compensations for victims’ losses; the increased amount of the compensations shall be two times the costs that the consumers paid for the commodities purchased or services received.

96. Cruden & Gelber, supra note 89, at 10.
CONCLUSION

Despite China’s civil procedure law requirement that the plaintiff in a civil lawsuit have a direct interest in the case, there have been local experiments in several provinces and cities to allow for relaxed standing requirements for the purpose of bringing public interest litigation. In particular, the procuratorates, environmental protection agencies, environmental NGOs, and sometimes even private individuals are allowed to bring environmental public interest litigation in the provinces and cities experimenting with relaxed standing requirements.

Compared to other entities and individuals that enjoy relaxed standing, the procuratorates are uniquely positioned to bring environmental civil enforcement actions. Procuratorates employ full-time legal professionals and have significant experience dealing with different types of cases. They also enjoy statutory authority to conduct investigations. This is particularly beneficial while investigating and collecting evidence in environmental cases, where finding relevant evidence is always a significant challenge. Procuratorates taking environmental civil enforcement actions is also consistent with the civil and common law practice in many other countries. In these cases, the procuratorate steps out of its traditional role of criminal enforcement and plays an active role in civil enforcement.

On the other hand, Chinese procuratorates also face many challenges in their new civil enforcement role. First, there is no clear legal basis for the procuratorate to bring civil enforcement lawsuits. Despite bottom-up efforts to push the envelope for relaxed standing, these efforts are generally local and experimental in nature. In order to ensure a civil enforcement mechanism is formally in place, revision of relevant national law is necessary. Fortunately, the latest draft amendment to the Civil Procedure Law included a provision that allows relevant agencies and social groups to bring environmental public interest lawsuits, so hope remains that statutory recognition of the procuratorates’ role in civil enforcement will come in the near future.

One concern related to prosecutorial activism in civil enforcement is whether the procuratorates have sufficient resources to devote to civil enforcement.

---

97. Different from EPA and the state environmental protection agencies in the U.S., there are very few lawyers on the staff of China’s environmental protection agencies at various levels. In terms of environmental NGOs, the majority of Chinese environmental NGOs is still in a preliminary stage and struggling with funding and staff resources, so many of them are unlikely to have a full-time lawyer on the staff to bring public interest litigation.

Chinese procuratorates have already been fully loaded with criminal prosecutions and various other statutory functions, and will have limited resources to devote to civil enforcement. Particularly, given that civil enforcement is relatively new to most of the procuratorates, they will likely need to spend significant time and resources exploring the new system before formally instituting any civil enforcement action.

Another issue raised by environmental NGOs is how to balance their relationship with the procuratorate when bringing civil environmental public interest litigation. The procuratorates possess unique strength that NGOs generally do not have in terms of experienced litigators and statutory authority to conduct investigations. Procuratorates have won or reached settlement agreements in all of the environmental civil enforcement cases brought so far. The NGOs are concerned that if the procuratorates continue to be aggressive in bringing civil environmental public interest litigation, then it will squeeze the NGOs out of the process, hinder their healthy development, and limit the development of civil society in the long run.

A final concern relates to prosecutorial activism. Civil enforcement is still a relatively uncharted territory in China, where rules are not clear and the procuratorate is a very powerful state agency with few meaningful external checks from either the legislature or the judiciary. If procuratorates become more and more aggressive in pursuing civil enforcement, it may raise the issue of “who is supervising the supervisor”? Despite various concerns regarding prosecutorial activism in civil enforcement, it has, overall, provided an effective alternative to administrative enforcement, and it has, to a certain degree, changed the landscape of judicial enforcement of environmental law in China. Going forward, if national law can be amended to formally recognize the role of the procuratorate in civil enforcement and detailed and feasible rules can be promulgated to facilitate and guide the procuratorate’s work to achieve

99. A significant portion of the environmental public interest cases brought by individuals and NGOs were not so successful.

100. An interesting argument made by Justice Antonio Herman Benjamin of the High Court of Brazil, who used to be a public prosecutor, is that prosecutorial activism in environmental civil enforcement actually helped and supported the growth of environmental NGOs in Brazil’s experience. Because there were essentially no NGOs bringing environmental public interest litigation at the very beginning, the procuratorate decided to set an example through its civil enforcement actions and, along the way, worked together with the NGOs to strengthen their capacity to bring environmental public interest litigation.

effective and efficient civil enforcement, it will help strengthen China’s environmental governance and push the country one step closer to long-term sustainable development.
NOTE

KEEPING UP WITH CHINESE CONSUMERISM: OFFSETTING CHINA’S INDIVIDUALLY GENERATED GARBAGE WITH REGULATORY AND SOCIAL MECHANISMS

Brandon Gillin*

Introduction ............................................................................................................ 69
I. Garbage Generation and Collection ............................................................... 72
   A. Garbage Generation .................................................................................... 72
   B. Garbage Collection .................................................................................... 76
II. Existing Regulatory Mechanisms ................................................................. 81
   A. Garbage Generation .................................................................................... 81
   B. Garbage Collection .................................................................................... 85
III. Proposals For More Effective Prevention of Individually Generated
     Garbage and Better Garbage Collection ...................................................... 87
   A. Garbage Generation .................................................................................... 88
   B. Garbage Collection .................................................................................... 93
Conclusion ........................................................................................................... 96

INTRODUCTION

China is transforming from its ancient agrarian beginnings into a modern, global economic powerhouse. In 2010, China’s economy passed...
that of Japan’s to become the second largest in the world.¹ The Chinese citizenry is changing along with the country’s economic prosperity. The agrarian majority of the Chinese population is moving into the cities now more than ever to compliment the demand for cheap labor in constructing the buildings that house China’s new urban enterprises.² Urbanization is occurring at a rate of 48%.³ In 2005, more than one-third (36 percent) of China’s population resided in cities, with the proportion estimated to increase to two-thirds by 2035—a rise from about 400 million to 900 million.⁴ This means that the average incomes for city-dwelling Chinese are on the rise.⁵ Average urban incomes in 2005 were around three times higher than rural incomes, and average urban incomes are expected to increase by 46.3% until 2015. Comparatively, rural incomes will only increase by around 27.9%.⁶ Not only are average urban incomes on the rise, but changes in lifestyle are occurring as well.⁷ Urban Chinese residents’ discretionary consumption spending is increasing,⁸ and there is an overall increase in consumerism occurring in urban Chinese areas.⁹ Ma Jun, director of the Institute of Public and Environmental Affairs, noted, “[a]s China’s urban population explodes, so does the quantity of waste it produces—by about 10% a year.”¹⁰ Serious garbage problems will arise if the increase in garbage generation is not carefully checked by way of limiting garbage generation, or by developing ways to collect and dispose of it.

China currently faces a crisis regarding its garbage-management, and that the damage will be greatly exacerbated if no measures are taken to

². See John Friedmann, China’s Urban Transition 57–76 (Univ. of Minn. Press 2005) (outlining the transition, beginning in the mid-1980s, of “tens of millions of ‘peasants’ . . . flooding into coastal cities, their suburbs, and the rural and semi-rural areas surrounding them.”); see also Jonathan Garner, The Rise of the Chinese Consumer: Theory and Evidence 61 (John Wiley & Sons, Ltd. 2005) (noting that “[p]opulation migration from the countryside to the cities has been and will be likely to remain huge and indeed involves unprecedented numbers of people and extreme changes in lifestyle within a single generation”).
⁴. Friedmann, supra note 2, at ix.
⁵. Garner, supra note 2, at 61.
⁶. Garner, supra note 2, at 69.
⁷. Id. at 64.
⁸. Id. at 69.
⁹. Id. at 77.
offset the mounting crisis. This paper considers two aspects of China’s garbage-management crisis while offering several suggestions on how those aspects may be improved. The first is the rapidly increasing amount of garbage being generated by individual citizens, and the second is how that increasing amount of garbage is overwhelming garbage collection systems in many areas of China. The forces driving China’s increasing garbage pollution are China’s unprecedented economic growth and inadequate garbage collection systems, which are unable to account for such an increase in garbage generation. In my paper I argue that, in order to combat the looming explosion with respect to garbage pollution in China, certain regulatory mechanisms must be implemented to improve garbage collection. Also, social mechanisms (i.e., altering public attitudes on garbage generation) must be part of the solution to ensure that China’s garbage is dealt with in a way that is sustainable, given the massive increase in consumerism occurring in China today. China is familiar with both the regulatory and social mechanisms I propose, and they have been successful in other contexts. Thus, I posit that they are suitable for implementation in the garbage-management context in China. The regulatory mechanism I propose in the garbage generation context is to compel schools to educate students on garbage reduction. The social mechanism I propose in the garbage generation context is to make efforts in fostering a change of norms in individual consumption habits, and by achieving a “republican moment” through these norm changes. The regulatory mechanisms I propose in the context of garbage collection are to compel garbage segregation services everywhere garbage is collected, to compel or provide incentives for recycling systems, and to adopt litter control accounts in city and county treasuries. The social mechanism I propose in the garbage collection context is to use national pride as a stepping stone for changing norms on efficient garbage collection and for changing attitudes on littering.

The framework around which this paper analyzes garbage generation and collection is a comparison between two of the world’s largest and most economically forceful nations: China and the United States. While the United States and China remain dissimilar in terms of their current overall developmental stages, the gap between the two nations is narrowing.

This paper, in Part II, sets forth the reasons why garbage pollution creates problems for humans and the quality of the natural environment. It lays a statistical foundation regarding the amount of garbage generated in China, while providing comparisons to the United States. A discussion follows on how the mounting garbage in China is causing problems in terms of garbage collection and how individuals are contributing to the problem. Several reasons are given as to why China’s increasing garbage,
along with its problems, will lead to even more garbage generation in China’s near future. Part III discusses China’s existing regulatory mechanisms in dealing with its increasing generation of garbage, and how garbage is collected, while offering comparisons to the United States. Part IV examines several regulatory and social mechanisms that have been used in China successfully in the past. It also explores some mechanisms that, though they have not yet been used in China, have a high likelihood of success in China because they have seen success in the United States. The paper concludes by offering perspective into what China’s garbage problem will likely become if no measures are taken to offset the problem.

I. GARBAGE GENERATION AND COLLECTION

This section provides information, including several individual accounts from Chinese citizens, on garbage to demonstrate the extent to which China’s garbage management—generation and collection—systems are in need of reforms. Comparisons are made between the garbage management systems of China and the United States.

A. Garbage Generation

The United States was once, cumulatively, the largest garbage generator in the world. The United States still generates the most garbage, per capita, worldwide. The Environmental Protection Agency (EPA) estimates that the average American discards 4.3 pounds of garbage per day. In the United States, there are widespread criticisms, disgruntled citizens, and a plethora of literature on America’s current garbage problem. Of course, America was not always a major garbage generator. Like China, America was once largely agrarian and “[d]uring the seventeenth and eighteenth centuries most Americans threw almost nothing away; they were so poor that manufactured goods were almost totally absent from their lives.” In early colonial cities in America, people dumped their rejectamenta (organic

12. Id.
14. ROGERS, supra note 13, at 32.
or otherwise) in backyards or into the street to rot or be eaten by foraging hogs, dogs, and raccoons.\textsuperscript{15} In the nineteenth century, Americans were conscious of the garbage that they generated; they sorted it and, in many instances, simply reused it; much of the municipal waste was composted.\textsuperscript{16} It was not until industrialization and two massive world wars that America’s economy boomed, consumerism rose, and garbage came under corporate influence, which, in turn, made garbage “good for business.”\textsuperscript{17} Throughout the twentieth century and into the present, America’s vast amount of garbage generation was largely attributable to the rise in consumerism that the United States experienced during the nineteenth century. China recently overtook the United States as the largest garbage generator, cumulatively, worldwide.\textsuperscript{18} Today, China has the most rapidly developing economy in the world. If the consumption habits of the Chinese citizenry lead to what occurred in America during the industrialization of the twentieth century, then the amount of garbage that China will produce will be staggering. China would likely become the greatest garbage generator, per capita, and garbage collection systems in many parts of China will be left unable to accommodate the huge amount of garbage.

China’s cumulative garbage generation currently amounts to 148 million tons of garbage every year, the highest in the world.\textsuperscript{19} That number is increasing at a rate of approximately ten percent per year.\textsuperscript{20} In 2006, the city of Beijing alone generated 5,851,000 tons of garbage.\textsuperscript{21} That number increased to 6,195,000 in 2007.\textsuperscript{22} The amount of garbage that Beijing
generates annually could create a mountain 360,000 square meters around and forty meters tall. In 2003, Beijing residents generated 18,400 tons of garbage per day. Of that garbage, only 8,000 tons of it was disposed of in accordance with the law, the rest of it "threatening the city like a bomb." Given that Beijing is seen as one of China’s most technologically advanced cities and, in some regards, one of its cleanest cities, the fact that only approximately 43% of the city’s residents’ generation of garbage is disposed of in accordance with the law has startling implications for the rest of the country. Shanghai, one of China’s most populous cities with an estimated population of 19 million, generates 6 million tons of garbage per year. It is estimated that annual Municipal Solid Waste (MSW) quantities across China will increase by 150% by 2030 when compared to quantities in 2007.

Even though China generates more waste than the United States as a country in total, the Chinese urban resident still generates 740 pounds less waste annually than an American urban resident. But because China’s population exceeds the United States’ population by nearly 4.4 times, the total waste generation in China is greater. Accordingly, the statistics above indicate that garbage generation from individual Chinese citizens is rapidly increasing.

One source of this increased amount of garbage is from the food industry. A study by the Hong Kong Bureau of Trade and Development found that Chinese residents’ consumption of packaged food increased by

24. Id.
25. Id.
27. Longmire Harrison, Merging Environmental and Energy Sustainability with Opportunities for U.S. Corporations, 7 SUSTAINABLE DEV. L. & POL’Y 53 (2007) (in terms of weight, that means that China will generate 480,000,000 tons of MSW in 2030, compared to 190,000,000 tons in 2004).
28. Id.
10.8% from 2000 to 2008. That is 4.2% higher than the average consumption of packaged foods in all of Asia. Many products in China, such as oranges and napkins in restaurants, are now individually wrapped in plastic packaging. This increased consumption of packaged foods is the result of China’s economic growth, which has created a notable difference in the younger generations’ purchasing habits as compared to the older generations’ in China. In past generations, agriculture was the primary focus. There were less material possessions, and what material possessions did exist were reused for other purposes rather than thrown away. But over the last twenty years, the amount of garbage generated from packaged foods in China has tripled, reaching approximately 300 million tons annually.

One villager near the city of Zhengzhou in Henan Province, said of the matter, “[w]e didn’t think that garbage was a problem before because we didn’t have supermarkets, we didn’t have fancy packaging, or an endless supply of food. But all of a sudden there is so much garbage and it is hard to know how to deal with it.” The packaged food industry encompasses chopsticks, the primary tool used for consuming food, which account for much of the garbage generated by the Chinese individual. Possibly hundreds of millions of chopsticks per day are used once and then thrown away. It is estimated that, by 2013, the packaged food market in China will be valued at $195 million—a 74% increase from 2008. If such estimations turn out to be correct, then more garbage will accumulate and instances of landfills being filled to capacity earlier than expected will

---

32. Id.
34. See Garner, supra note 2, at 77 (“An older population consumes different products to a younger generation.”).
35. Ban sui jing ji fa zhan zhong guo la ji wen ti yan zhong (伴随经济发 展 中国垃圾问题研究) [With China’s Developing Economy, the Garbage Problem is Becoming More Serious], supra note 31.
37. Id.
39. Ban sui jing ji fa zhan zhong guo la ji wen ti yan zhong (伴随经济发 展 中国垃圾问题研究) [With China’s Developing Economy, the Garbage Problem is Becoming More Serious], supra note 31.
occur more frequently. Additionally, print media, such as newspapers and magazines, are becoming thicker due to increased advertising. Obsolete electronics, due to the consumer’s demand for newer versions, are also contributing to the waste stream.

The United States, similarly, has experienced an influx of garbage as a result of the packaging industry. Ever since the 1930’s, when many different types of plastics became available for various uses, the packaged foods industry skyrocketed. While waste related to organic food scraps went down, “packaging waste went up.” Packaging is the largest and fastest growing category of garbage in America. There are numerous environmental problems associated with plastics entering the waste stream, including that plastic remains intact anywhere from 200 to 1,000 years and that buried plastic leaches hazardous materials into the water and soil. Despite the dangers posed by plastics, the plastics industry in the United States continues to grow “at twice the annual rate of all other manufacturing combined.” Of course, plastics are not the only garbage entering the American waste stream. In 2003, Americans discarded “almost 500 billion pounds of paper, glass, plastic, wood, food, metal, clothing, dead electronics, and other refuse.” Instead of consumers buying products that are reusable, consumers finding uses for otherwise disposable objects, or companies manufacturing reusable items, 80% of United States products are used once and then discarded.

B. Garbage Collection

Not only is garbage being generated in China like never before, it is also piling up where it should not, but the pileup is also adversely affecting the quality of both the human and natural environments. In “all but the most remote places” in China, garbage is often seen dotted across the land.

40. Id.
41. Hoornweg, supra note 33.
42. ROYTE, supra note 11, at 21.
43. ROGERS, supra note 13, at 5.
44. Id. at 5
45. Id. at 6
46. Id. at 2
47. Id. at 6
48. RISSANEN, supra note 38, at 9.
rivers, oceans, and on streets—urban and rural. This stark reality makes clear that the garbage collection methods for ultimate disposal are lacking in China.

In the United States, garbage collection is controlled and regulated by both the government and private companies. Federal, state, and local regulations dictate how garbage is collected. Municipalities enter into contracts with private companies, operating under those regulations, to collect the garbage. Most, if not all, municipalities enter into contracts with private companies to carry out garbage collection. The American garbage collection system is daunting:

Collecting, sorting, processing, and ultimately disposing of the 630,000 tons of trash Americans generate each day requires an enormous infrastructure. The private waste services industry in the U.S. operates more than 100,000 trash collection trucks each day, collecting both residential and commercial garbage, employs about 270,000 people, and operates about 1,700 recycling processing facilities and more than 2,000 landfills and other disposal facilities nationwide.

Garbage collection in America is a profitable business. Companies will go where profits are to be made. Generally, garbage in America is timely and effectively trucked to landfills. Often, Americans are so unaware or

50. See KUZHU RIVER DROWNING IN TRASH, CHINA DAILY, July 7, 2009 (pointing out that the Kuzhu River, near the World Heritage Zhangjiajie National Forest Park in Zhangjiajie is infested with garbage which is believed to be littered by the increasing amounts of tourists in the area), available at http://www.chinadaily.net/china/2009-07/07/content_8385701.htm.


54. See Hoornweg, supra note 33. (noting that “[i]n most countries, solid waste management is a municipal responsibility”).


apathetic about what happens to their garbage once it is discarded and placed onto the street for collection that one New York City sanitation worker said, “[p]eople think there’s a garbage fairy . . . . You put your trash on the curb, and then pffft, it’s gone. They don’t have a clue.”

Garbage collection systems are widely varied between Chinese cities and even among different parts of cities. The discrepancy is attributable to the wealth of the city or the community within the city. Residential garbage collection is sporadic in many Chinese cities. Some areas have collection services up to three times per day, while other areas have no collection whatsoever. In urban China, waste collection is comprised of a two-tier system: primary and secondary collection. Primary collection includes storage and transportation of garbage from households to collection points. Secondary collection includes storage and transportation from collection points to points of treatment and disposal. The primary collection mechanisms are more relevant to this paper, since they are responsible for ensuring that garbage is routed from individuals’ homes to collection facilities, instead of becoming neglected piles of garbage that can end up in the streets or in waterways. Moreover, reliable primary collection mechanisms may give individuals an alternative to littering. While the primary collection mechanisms in urban China provide “a relatively high level of sanitation,” the same cannot be said of collection mechanisms in rural China.

Last year, a resident of the city of Hanghzou in Zhejiang Province began a blog called “Odor Blog,” in which he publishes his complaints about the garbage pileup in his district. He wrote in one entry, “[a]t 9:30 in the evening, when I come home after work, I can smell the rancid [pileup of] garbage as I walk through the gate entering our district. I dare not open my mouth to breathe deeply because the smell is particularly painful.” In March of 2010, in Changchun, the capital city of Jilin Province, heaps of garbage and snow mixed together caused major traffic problems and

57. ELIZABETH ROYTE, GARBAGE LAND: ON THE SECRET TRAIL OF TRASH 39 (Little, Brown 2005); see also HEATHER ROGERS, GONE TOMORROW: THE HIDDEN LIFE OF GARBAGE 11 (The New Press 2005) (“[M]any people have only a vague sense of where their discards go. They may think that trash is benignly and permanently disposed of in ‘proper’ places.”).

58. RISSANEN, supra note 38, at 13.
59. Id.
60. Hoornweg, supra note 34, at 33.
61. RISSANEN, supra note 38, at 13.
62. Id. at 14.
residents complained of garbage trucks either not coming by regularly to collect the garbage, or garbage trucks passing by the garbage without stopping to collect it.\textsuperscript{64}

While much of China’s garbage ends up in landfills,\textsuperscript{65} a staggering amount of garbage does not reach the landfills, but is littered on the ground instead. In urban Chinese settings, cities, as part of the primary collection mechanism, employ human street sweepers to collect the garbage that accumulates on the city streets. Additionally, the “shou po lan de”—garbage pickers—rummage the cities for the primary purpose of collecting the garbage that can be redeemed for cash or sold to industry for other purposes.\textsuperscript{66} Wang Weiping, a Beijing government advisor, said that the city has over 170,000 garbage pickers who process one-third of Beijing’s trash.\textsuperscript{67} But in rural China, where it is estimated that 80% of all Chinese residents live,\textsuperscript{68} garbage pickers are less likely to be seen because they make a living by migrating to the cities to work. In rural settings, “waste is either poorly managed or simply disposed of in rivers and on land.”\textsuperscript{69}

The village of Hongshan, near the city of Wuhan in Hubei Province, represents just one example of the problem of garbage pollution due to littering that is widespread in rural China. Wang Haofeng, a photojournalist for the Wuhan Morning News, photographed the littered village\textsuperscript{70} and gave a brief description of the extent of the problem:

[The littered area] is close to several universities and research institutes, where there are many restaurants, so large amounts of garbage are generated. The household-generated waste in this village is dumped at the entrance of

\textsuperscript{64} Heaps of Snow-Garbage Mix Make Travel Difficult For Changchun Residents, CHINA GARBAGE NEWS, Mar. 25, 2010, available at http://chinagarbage.wordpress.com/2010/03/25/heapsof-snow-garbage-mix-make-travel-difficult-for-changchun-residents; the Chinese version of this article can be found at http://news.163.com/10/0325/01/62J9LL4O000146BB.html.

\textsuperscript{65} See Longmire, supra note 28. (noting that landfills around Chinese cities amount to about 50,000 hectares [which is over 193 square miles]).


\textsuperscript{69} Li Zhiping, Protection of Peasants’ Environmental Rights During Social Transition: Rural Regions in Guangdong Province, 8 VT. J. ENVTL. L. 337, 339 (2007).

\textsuperscript{70} Wang, supra note 49.
the village, and no department is responsible for disposing of the garbage. Each time the garbage piles up so high that the flies become unbearable, someone sets fire to the mountain of garbage to smoke away the flies. Once set on fire, the garbage can sometimes burn continuously for several days. This approach of garbage disposal has existed for many years. A river beside the village is heavily polluted with much of this garbage, and has come to be known as the “garbage river.”

The municipal environmental sanitation administrative bureaus are responsible for daily garbage collection and transportation. Municipal governments levy fees for the disposal of waste by residential, commercial, and industrial producers as part of general taxation. The fact that the litter in villages like Hongshan is so extensive causes one to wonder where the municipal sanitation administrative bureaus are and where the villagers’ tax money goes. Li Zhiping, a Professor of Law at Sun Yat-sen University in Guangzhou, has stated that “[w]aste has become the most serious pollution problem in rural environments. Some rural places have launched waste collection programs, but the waste collected is only moved to remote places instead of being handled because of the lack of unified planning, handling establishments, and facilities.” In the case of Hongshan, the garbage is not piled up in a remote place, but rather in a heavily traveled alleyway near several universities.

Basic garbage collection mechanisms and infrastructure are likely insufficient in many other areas of China. As the sanitation department in Hankou stated, the department cannot keep up with the amount of garbage that individuals generate. Wang Jiuliang, an award-winning photographer who studies Beijing’s landfills, has stated, “China has become a consumer society over the past 10 or 20 years. The authorities are working hard to solve the garbage problem, but it has emerged too quickly.” The problem is only going to get worse unless measures are taken to alleviate the garbage generation and collection insufficiencies. The remainder of this

71. Wang, supra note 49.
73. RISSANEN, supra note 38, at 9.
75. Cite to Wang Hao Feng.
paper will focus on what regulatory measures, if any, are currently in existence to curb the amount of garbage that is generated by the individual and to compel satisfactory collection of such garbage.

II. EXISTING REGULATORY MECHANISMS

Despite the fact that no country besides China has ever experienced as large or rapid of an increase in garbage generation, there are surprisingly very few regulatory mechanisms in place to offset the massive and increasing amount of garbage that is being generated. This section outlines China’s existing regulatory mechanisms for dealing with garbage generation and collection, and concludes that the existing regulatory mechanisms are insufficient to handle the huge and ever-growing garbage generation predicament with which China is currently faced.

A. Garbage Generation

In a World Bank report identifying several critical solid waste management issues facing China, the first issue listed was “Waste Quantities, which have an “unsurpassed rate of growth in waste generation, dramatically changing composition, and minimal waste reduction efforts . . . .” This shows that the increasing amount of garbage generation is creating concern on an international level. This section will identify to what extent Chinese authorities have addressed, through regulatory measures, the growing concern over the increasing amount of individually generated garbage.

The primary regulatory mechanism for the prevention and minimization of individually generated garbage is the “Prevention and Control of Environmental Pollution by Solid Waste Law,” which was promulgated by Order No. 31 of the President of the People's Republic of China on December 29, 2004. This nationwide law states that:

Products and packing materials shall be designed and manufactured in compliance with the State regulations governing cleaner production. The administrative
department for standardization under the State Council shall, on the basis of the economic and technological conditions of the State, in light of the prevention and control of environment pollution by solid waste and in compliance with the technical requirements of the products, take charge of formulating relevant standards to prevent environmental pollution by over-packing.

The enterprises, which manufacture, sell, or import products and packaging materials included in the compulsory recovery catalog, according to law, shall recover the said products and packaging materials according to the relevant regulations of the State. The State encourages research institutions and manufacturers to conduct research in and manufacture thin-film sheetings and product-packaging materials that are easily recycled or treated, or are biodegradable.80

This law aims to use several methods to minimize the extent to which the individual generates garbage. First, it calls for manufacturers to comply with national regulations on “cleaner production.”81 Second, it mandates that the State Council formulate “relevant standards” to prevent garbage pollution caused by packaging.82 Third, those manufacturers included in the “compulsory recovery catalog” are compelled to comply with State laws by “recover[ing]” certain types of packaging.83 Lastly, the State “encourages” certain entities to research and develop environmentally sustainable packaging.84 Provincial and city governments, as well as manufacturers, are compelled to follow laws such as this, which are promulgated by the National People’s Congress. The environmental problems associated with China’s serious garbage pollution, which are highlighted throughout this paper, call into question the effectiveness of this nationwide law. In the following sections of this paper, the control mechanisms of this law are analyzed in greater detail. I conclude that this law gives great latitude to those entities to which the law is directed and is an insufficient enforcement mechanism.

80. Id.
81. Id.
82. Id.
83. Id.
84. Id.
There have been government sponsored programs implemented in China to foster a sense of cleanliness and sanitation, such as “To Establish Cultural and Sanitary Cities Everyone Has a Responsibility,” along with listing littering as one of the “evils associated with uncultured and unsanitary cities.”

Beijing has also implemented a rather vague law that specifically aims to reduce the amount of garbage that is generated:

Household garbage and other wastes in the municipality shall be disposed of according to the principles of qualification, harmlessness, and turning them into resources. Effective measures shall be taken to minimize the production of household garbage and other wastes, collect household garbage separately, and make comprehensive use of them so as to enhance the level of disposing of the household garbage and other wastes in harmless ways. According to the principle that the producer of garbage shall be obliged to dispose of the garbage produced, the producer of garbage shall be responsible for the expenses of disposing of household garbage.

But laws such as these have been difficult to enforce. Enforcing laws in China is difficult not only in the area of garbage management, but in other areas of the law as well. It has been suggested that one reason behind poor enforcement of Chinese laws is that local officials, like those in charge of garbage management systems, need large amounts of financial resources from the central government just “to remain relevant and in power.” With regard to garbage management, this means that the financial resources that would normally go toward garbage management are used for purposes other than for what they were intended.

The Chinese government has recently taken more drastic and specific measures to minimize individually generated garbage. In June 2008, China began a nationwide initiative which forbade shops from handing out free plastic bags and also banned the production of “ultra-thin” (those thinner

85. RISSANEN, supra note 38, at 13.
86. Beijing Municipal Regulations on City Appearance and Environmental Sanitation, Ch. 5, Sec. 2, Art. 55 (Oct. 1, 2002).
87. RISSANEN, supra note 38, at 13.
89. Id.
than 0.025mm) plastic bags, in an attempt to decrease the amount of garbage pollution. Regulations like these have proven successful in cities in other countries such as Australia, Mexico, and in United States cities, such as San Francisco. Other United States cities, such as Los Angeles, Seattle, Boston, Portland, and Phoenix, have begun thinking about implementing similar bans. The ban has had some success in China. It is estimated that some 40 billion plastic bags have been halted from entering the waste stream. Sanitation workers in Beijing, Shanghai, and Guangzhou have reported that plastic waste has diminished by about 20 percent.

But the ban on plastic bags, like many other laws in China, remains difficult to enforce. Many small family-owned businesses have begun to produce ultra-thin plastic bags to fill the niche for that market, which had before been filled by large manufacturers who have since gone out of business due to the ban. Thus, it is reported that, “[p]lastic bags, especially those ultra-thin ones you often see hanging on trees or littering back streets, still rule the day at wet markets across the country.” A survey indicated that about 65 percent of small shops ignore the ban.

Although some efforts are being made in the area of minimizing garbage generation, whether it be programs implemented to change

---

97. Gorn, supra note 94.
98. Id.
99. Id.
102. Id.
103. Id.
104. Id.
attitudes on environmental consciousness or banning plastic bags, more regulation and enforcement will be needed to offset the increasing trend of consumerism that is occurring in China. Beijing has attempted to provide short-term solutions to the problems caused by the influx of consumerism and worries of environmental sanitation. Beijing’s landfills, which surround the city and are called by some as the city’s “seventh ring”, are filling up rapidly—they will meet their capacity in four years—and are causing residents to complain about the stench that affects their everyday lives. In fact, the number of rubbish-related complaints in Beijing increased by 57% in 2009. The government stated that it plans to spend more money on waste management, in particular on its recycling program, but, for now, one landfill in Beijing, the Asuwei landfill, is being shot with 100 deodorant guns to relieve the stench emitting from the site.

If China is serious about targeting its garbage problem, it will need to act fast and it will need to implement long-term solutions to offset the consumeristic lifestyle that its citizenry are beginning to adopt. Moreover, attitudes on any type of environmental consciousness are unlikely to change until the population is comprised mostly of those who have been educated on environmental awareness. The World Bank, in a 2005 report, noted that, “Chinese authorities will not be able to stop the waste stream from growing; all they can do is reduce the rate of growth.”

B. Garbage Collection

The primary regulatory control for garbage collection in China is the “Prevention and Control of Environmental Pollution by Solid Waste Law”. This law sets forth that the responsible entities to oversee garbage collection are the administrative department of construction under the State Council, and the administrative departments for environmental sanitation under the local people’s governments at or above the county level.

105. Watts, supra note 78.
106. Id.
107. Id.
108. See id. (noting that “[l]ess than 4% of Beijing's rubbish is recycled – the UK recycles 35% – but is still near the bottom of the EU recycling league.”).
109. Id.
110. RISSANEN, supra note 38, at 13.
111. Hoornweg, supra note 34, at 20.
113. Id. Ch. I, Art. 10.
specifies that, “People’s governments at or above the county level shall . . . promote [the] industrialized collection and treatment [of household waste], and gradually establish a sound social service system for prevention and control of environmental pollution by household waste.”

Additionally, with respect to individually generated garbage, it states, “[u]rban household waste shall be cleaned up and transported in a timely manner, it shall gradually be classified in different categories for collection and transportation, and efforts shall be made to have it rationally utilized and turned into something innocuous through treatment.”

Thus, the law focuses primarily on the collection and cleanup of garbage generated in urban settings, with the collection of garbage generated in rural settings to be specified and “formulated in local regulations.”

Municipal governments in urban settings have undertaken various measures to ensure a functionally operational garbage collection system. In the city of Hangzhou in Zhejiang Province, the municipal government, like that of many Chinese cities, has set up garbage collection points in residential communities. In March of 2010, the city of Hangzhou implemented a garbage separation system by placing color-coded garbage bins in many of these residential communities to facilitate more efficient garbage collection. However, after only several days of this garbage-separation program, it was found that the residents of these communities were not separating the garbage; instead, they were throwing all of their garbage into the same bins because they found the system too confusing. To make matters worse, the garbage collecting trucks simply threw all of the garbage in the separated bins into the same part of the truck, defeating the purpose of separating the garbage in the first place.

Garbage collection companies may enter into contracts with the municipality, thus providing an economic incentive for effective garbage collection.

---

114. *Id.* Ch. III, Sec. 3, Art. 38.
115. *Id.* Ch. III, Sec. 3, Art. 42.
116. *Id.* Ch. III, Sec. 3, Art. 49.
118. *Id.*
120. *Id.*
collection. In addition, garbage collectors and street sweepers usually comprise the largest single group of employees in cities, with an estimated 1,300,000 formally employed in the urban garbage collection system.\textsuperscript{122} But even with these regulatory efforts, garbage is still mounting in places where it should be collected. The Kuzhu River, near the Zhangjiajie National Forest Park in northern Hunan Province, is one such place where it is evident that garbage collection systems for households are insufficient. The river is polluted with thousands of tons of garbage, most of which is packaging from household things—like washing powder—floating downstream.\textsuperscript{123}

Laws against littering often go hand-in-hand with garbage collection regulatory measures. The laws against littering in some cities subject offenders to fines. In Beijing, it is illegal to litter “rinds, peels, nuts, cigarette butts, waste paper, chewing gum, plastic bags, packaging materials, and other wastes.”\textsuperscript{124} Violators are subject to fines of anywhere between 20–50 Renminbi.\textsuperscript{125} But, as discussed with regard to laws aimed at lowering garbage generation, these laws, aimed at preventing littering and thus making garbage collection more succinct and efficient, are poorly enforced.\textsuperscript{126} These laws are similar to those intended to decrease garbage generation because neither are properly enforced. The pollution of the Kuzhu River, and others like it, provides some evidence of the lack of enforcement of the anti-littering laws.

III. PROPOSALS FOR MORE EFFECTIVE PREVENTION OF INDIVIDUALLY GENERATED GARBAGE AND BETTER GARBAGE COLLECTION

This section offers proposals for alleviating the environmental problems associated with the increasing amount of domestic garbage in China, both at the generation stage and at the collection stage. The proposals are in the form of regulatory and social mechanisms. My proposal to improve curbing excessive garbage generation in China is to compel schools to educate students on garbage reduction—a regulatory mechanism that has seen some success in the United States and is likely to be successful in China given

\textsuperscript{122} Hoornweg, supra note 34, at 25.
\textsuperscript{124} Beijing Municipal Regulations on City Appearance and Environmental Sanitation, Ch. 5, Sec. 1, Art. 53 (Oct. 1, 2002).
\textsuperscript{125} Id.
\textsuperscript{126} RISSANEN, supra note 38, at 13.
China’s centralized education system. One proposal to improve garbage collection is to require administrative agencies with powers over garbage collection to offer garbage segregation services to various entities, including individual residents—a regulatory mechanism. Some Chinese cities have begun to offer segregation services on a trial basis, and those services have shown early signs of success. A social mechanism, on the other hand, may be starting grassroots organizations that encourage and financially support methods to raise public awareness and environmental consciousness on garbage-related issues. While grassroots environmental organizations in China are not as common as in the United States, they are beginning to have more prominence in China as younger generations are being exposed to environmental causes abroad and are making connections between foreign environmental organizations and domestic needs for such organizations. A combination of both a social and a regulatory mechanism would generally alter individual activity in the way of dealing with garbage by changing social norms. However, for norms to change individual behavior, regulatory measures such as public education, sanctions, and other market-based incentives must be initiated.127

A. Garbage Generation

1. Regulatory Mechanisms

Regulating the way individuals generate garbage, like other regulatory mechanisms aimed at individual behavior in the context of the United States, has, according to some, “failed or not been tried because of the monumental task and cost of regulating personal behavior, the intrusiveness of doing so, and the inhibiting fear of political backlash should regulation be attempted.”128 However, while regulating individual behavior is politically difficult in the United States, regulating individual behavior in China is done routinely129 and is easier, given China’s centralized politburo,

127. Hope M. Babcock, Assuming Personal Responsibility for Improving the Environment: Moving Toward a New Environmental Norm, 33 HARV. ENVTL. L. REV. 117 (2009) (arguing that changing societal norms by way of regulatory mechanisms is one way to change individuals’ environmentally destructive lifestyles).


129. Most notably, China’s One-Child Policy, but also in pollution control, internet accessibility, formation of political groups, and journalistic practices. See Peter Walker, Beijing Olympics: 1.5m Cars Banned From Roads in Last-Ditch Smog Effort, THE GUARDIAN, July 21, 2008, available at http://www.guardian.co.uk/world/2008/jul/21/china.olympicgames2008 (indicating that individuals are regulated by way of when they may drive their automobiles); See also China Launches ...
because there is less political opposition to delay the implementation of such regulations.  

Rather than regulating individuals directly, some states in the United States have chosen to enact laws aimed at rewarding and encouraging garbage reduction in its schools. One such law is Washington State’s “Waste Reduction and Recycling Awards Program in K-12 Public Schools—Encouraging Waste Reduction and Recycling in Private Schools.” That law requires public schools, and encourages private schools, to develop waste reduction and recycling programs. The class of students that achieves the greatest waste reduction and recycles the most will be given a monetary award of not less than five thousand dollars. Programs such as these could be viable in China, so long as they are embedded in the Chinese educational system. The advantage that China has is that such a program could be mandatory in the vast majority of schools, since the vast majority of schools in China are public. Such programs would likely have the multi-effect of saving the schools money by reducing their garbage collection fees and also educating young students on how to effectively reduce, reuse, and recycle garbage that would otherwise enter the waste stream.

2. Social Mechanisms

Some scholars have argued that what is needed to change individual behavior for the better in environmental protection is a “republican moment.” A “republican moment” in this context refers to a kind of epiphany wherein an individual gains awareness of environmental issues,
and changes his/her previously environmentally-destructive lifestyle. It is when such an epiphany comes to pass that the “environmental citizen” is created.\textsuperscript{135} Some believe that a prime example of a “republican moment” came in the United States in response to environmental disasters in the late 1960s and early 1970s, which gave rise to the birth of Earth Day, the first environmental holiday, and an unprecedented amount of Congressional support for environmental legislation.\textsuperscript{136} Sweeping Federal environmental laws were passed as a result of this “republican moment,” including the National Environmental Policy Act (NEPA), the Clean Air Act (CAA), and the Clean Water Act (CWA), to name just a few. Hope M. Babcock, an American legal scholar who has written extensively on the “republican moment,” believes that a new “republican moment” is currently happening in the United States in the context of global climate change. She believes that individual Americans should harness and expand the momentum of the global climate change “republican moment” in order to make a difference in how individuals behave with respect to environmental awareness.\textsuperscript{137}

China is in the unique position to more easily foster a republican moment among its citizens than is the United States. Such a movement in China could lead to enormous environmentally-beneficial changes in the way individual Chinese citizens behave with respect to garbage generation. There are several reasons why China can more easily achieve a republican moment. First, China has a centralized politburo. If faced with a national crisis, then the Central Government can swiftly enact legislation in an attempt to alleviate a problem without competing-party opposition. As Victor Chu, Chairman of First Eastern Investment Group in Hong Kong, said, “[i]t is more challenging for democratic systems [to make unpopular, but necessary changes] because every day they come under public pressure and every short period they have to go back to the polls [, however,] China [can] make long-term strategic decisions and then execute them clinically.”\textsuperscript{138} This can be seen in the nationwide ban on plastic bags, discussed above. It can also be seen through national education campaigns, such as the “Patriotic Education Campaign” that began in the early 1990s.\textsuperscript{139}

\begin{itemize}
\item \textsuperscript{135} Babcock, supra note 127, at 3.
\item \textsuperscript{136} Id.
\item \textsuperscript{137} Id.
\item \textsuperscript{139} See Zheng Wang, National Humiliation, History Education, and the Politics of Historical Memory: Patriotic Education Campaign in China, INT’L STUDIES Q. 52, 783-806 (2008) (explaining that the Patriotic Education Campaign is an attempt at “ideological reeducation”).
\end{itemize}
Indeed, one way to create or modify norms and to influence perceptions about the acceptability of certain behaviors is by enacting a law or issuing a regulation mandating certain behavior. Some suggest that the mere proposal of a new law or regulation will cause “a jump to a new [behavioral] equilibrium.” Second, Chinese citizens largely get their news and information from state-controlled media. Chinese state-controlled media are regularly compelled to either report on certain news, or, if given the option to report on a piece of news, are compelled to report that piece of news in a particular way. While the “republican moment” is a social mechanism that can lead to policy changes at the regulatory level and to changes in individual behavior, it is not always self-activating. For a republican moment to occur, individual citizens need to be educated and mobilized to change personal behavior. In China, with respect to garbage pollution, it would be relatively easy for the Chinese central government to initiate public-awareness campaigns in formal education settings on the virtues of garbage segregation, recycling, composting, and reducing the amount of garbage individuals generate. The media could also play a role, assuming it has permission from the government, by reporting on garbage pollution issues. The media has already begun to report on such issues. Education through formal campaigns brought about by the legislative process and mobilization of the public on garbage pollution issues through media will foster a sense of civic republicanism among the Chinese general public.

The “[republican] moment must be seized if a new norm of individual environmental responsibility is to materialize and a reawakened environmental citizen who takes greater responsibility for her personal behavior is to emerge.” In the context of climate change in the United States, individual practices, such as driving big, powerful cars, using a lot of electricity, generating a lot of waste, and collectively sending pollution in massive amounts to often distant waterways and airsheds, are examples of environmentally destructive behavior. Unlike in the United States, where personal lifestyle choices are currently beyond the scope of environmental laws, individuals in China are routinely regulated and, in the relative
infancy of Chinese environmental laws, could easily be included in regulatory mechanisms for preventing excessive garbage generation.

In order for China to offset the increasing amount of garbage being generated by an increasingly consumeristic society, the country could implement the above-described methods to build toward a “republican moment” among its citizens regarding garbage awareness.

As an alternative to the government being the instigator of norm modification, environmental groups can fill this role.146 All that is needed are some sort of “norm entrepreneurs,” who are “self-appointed champions of particular values or rules of behavior,”147 to initiate changes in individual environmental behavior. Environmental groups in the United States have the benefit of having: (1) experience in educating the public; (2) expertise in environmental problems, in using the media for information dispersal, and in local organizing and coalition building; (3) the ability to simplify complex environmental information; and (4) more trust from citizens than does the government.148 In China, there are far fewer environmental groups than in the United States. Although the Chinese government restricts their practices to some extent, environmental groups in China are increasing in number.149 Yet, student-led environmental groups have had some success in promoting environmental values. “In 2004, on Earth Day, a reported 100,000 Chinese college students in 22 provinces participated in environmental activities organized by university groups.”150 Environmental groups should help by distributing information to the general public about ways to limit consumption of products that add massive amounts of garbage to the waste stream.

146. See id. at 17 (arguing that environmental groups, not the government, should take on the role of the norm entrepreneur).
148. Babcock, supra note 127, at 17
149. See Elizabeth Economy, Testimony on China’s Environmental Movement, COUNCIL ON FOREIGN RELATIONS, Feb. 7, 2005, available at http://www.cfr.org/publication/7770 (last visited on Dec. 18, 2009) (“until the Chinese government removes its restrictions on NGO registration and otherwise supports the development of civil society, the environmental movement may remain limited in size, as well as forced to operate under the shadow of knowledge that political caprice or shifting political winds could force them to pull back from their efforts, or risk being shut down entirely.”).
150. Id.
B. Garbage Collection

1. Regulatory Mechanisms

The way garbage is collected in China needs to undergo major changes. Currently, its collection services are inadequate to meet the demand of the growing amount of garbage being generated around the country. \(^{151}\)

One regulatory mechanism available to improve the garbage collection system in China is to require the appropriate administrative departments to provide garbage segregation services. The World Bank considers this mechanism to be the most important for China as it advances its garbage collection infrastructure. \(^{152}\) Garbage segregation services provide the individual garbage generator with the option of placing garbage in separate or “segregated” containers, such as recyclable, compostable, or burnable. While higher collection costs are associated with garbage segregation and it requires compliance from garbage generators in order for the service to make an impact, \(^{153}\) garbage segregation services provide multiple functions. Garbage segregation paves the way for advanced waste management programs, such as recycling, composting, and incineration \(^{154}\) (discussed below), because such programs are nearly impossible to undertake when all types of garbage are collected in a mixture. Segregation also increases the ability for such advanced techniques to be implemented successfully since “non-contaminated dry waste is more easily recycled” \(^{155}\) and it improves the quality of compost and optimizes incineration. \(^{156}\) Additionally, garbage segregation services will increase awareness of the severity of China’s garbage problems among the general population, thereby reducing the rate of growth in garbage generation. \(^{157}\) Finally, with the optimization of advanced management techniques, garbage segregation increases the likelihood that there will be guaranteed financial returns because the costs

---

\(^{151}\) See generally The Troubles of Municipal Solid Waste: China Has Become the Country with the Most Serious Garbage Problem, GUANCHA YU SIKAO, July 17, 2009 (“With the rapid urbanization and economic development, China's urban waste problem has become increasingly prominent.”), available at http://news.sina.com.cn/c/sd/2009-07-17/102718242056.shtml (last visited on Nov. 20, 2011).

\(^{152}\) Hoornweg, supra note 34, at 33.

\(^{153}\) Id.

\(^{154}\) Id. at 32.

\(^{155}\) Id. at 34.

\(^{156}\) Id.

\(^{157}\) Id.
of garbage collection can be better allocated by segregating different types of garbage and financing for the services is more easily obtained.\textsuperscript{158}

Offering garbage segregation services could be very successful in China. Currently, several Chinese cities are offering garbage segregation services on a trial basis, and the programs are showing signs of success, although more education is needed to bolster the effectiveness of the garbage segregation programs. As discussed above, the city of Hangzhou implemented garbage separation services on a trial basis, but the citizens were confused as to how to use it.\textsuperscript{159} However, increased education could alleviate such confusion.

Another regulatory mechanism available to Chinese lawmakers is to establish a mandatory or voluntary incentive-based recycling system for individuals. The administrative agency could mandate such regulations to garbage collecting companies so that the companies would be required to offer recycling services in residential areas. Much of the individually generated waste stream contains recyclable materials, such as papers, plastics, glass, and metals. Moreover, each of these materials has a market-based monetary value.\textsuperscript{160} Requiring garbage-generators to sort out recyclable materials (garbage segregation) would add costs to the administrative agency, but the monetary value of the recyclable materials would offset at least some of the cost of obtaining the recycled materials. Currently, the recycling rates in China are lower than most other countries.\textsuperscript{161} The recyclable materials that enter the Chinese waste stream are rapidly increasing. Paper is one such material, and it has a relatively high recyclability. Thus, it should be a “priority commodity for planners of recycling programs to address.”\textsuperscript{162}

Making a mandatory or voluntary incentive-based recycling system has a high likelihood for success in China because there is already a demand for many recycled goods as informal recycled-product industries are beginning to emerge. Several Chinese cities’ entire economies thrive on the recycling of plastics, including Wen’an city, about 120 kilometers south of Beijing.\textsuperscript{163} Therefore, at least with regard to the recycling of plastics, building the infrastructure to handle such a monumental task as recycling the 52 million

\begin{itemize}
  \item \textsuperscript{158} \textit{Id.}
  \item \textsuperscript{159} \textit{For Hangzhou Residents, Garbage Separation is Like a Confusing ‘Multiple-Choice Quiz’, supra note 117.}
  \item \textsuperscript{160} Hoornweg, \textit{supra} note 33, at 26.
  \item \textsuperscript{161} \textit{Id.}
  \item \textsuperscript{162} \textit{Id. at 27.}
  \item \textsuperscript{163} \textit{Garbage In, Pollution Out,} China Net, Mar. 18, 2010, available at http://www.china.org.cn/2010-03/18/content_19631882.htm (last visited on Sept. 4, 2011).
\end{itemize}
tons of plastic that China consumes each year\(^\text{164}\) has for the most part already been finished by private enterprises. All the government needs to do is increase segregation services in the cities and build collection centers to which the trucks can bring the recyclable materials, which will then be sent to the already-existing recycling centers. Industries that produce plastic bottles made from recycled plastic are reported to be “just around the corner” in their emergence in the Chinese market.\(^\text{165}\)

With respect to the collection of littered garbage, additional funding is needed to undertake an effective system. Local and provincial governments could create a specific account within the treasury to be used exclusively for the collection of litter and to raise awareness among the general public on the subject. In the United States, such programs are promulgated at the State level. Washington State, for example, has created the “Waste reduction, recycling, and litter control account.”\(^\text{166}\) The Washington State legislature indicated that monies in the account are to be used for: (1) litter collection programs; (2) conducting biennial litter surveys; (3) raising statewide public awareness; (4) ensuring compliance; and (5) purchasing “equipment that will enable the department to account for the greatest return on investment in terms of reaching a zero litter goal.”\(^\text{167}\)

Creating a specific account in Provincial-level treasuries to combat litter could be a useful way for China to curb its litter problem, in the same way that it has worked in the United States. In urban areas, such accounts exist already, and are used to employ street sweepers to clean up litter. But in the countryside and in smaller cities, street sweepers are more seldom seen. If the account is created at the Provincial-level, with a certain percentage allocated to all areas in the province, instead of the treasury account at the city-level only, all areas of the province will benefit from litter-control programs.

2. Social Mechanisms

Before regulatory measures are carried out to address garbage collection issues, a social mechanism could be employed to encourage
individuals to take garbage collection issues seriously—as a matter of national pride. Chinese national pride has proven to be an effective way to mobilize the People’s Republic of China. China’s youth of today are known for their loyalty to the State and national pride. If the government, through state-run media, were to run patriotic advertising campaigns on environmentally friendly garbage collection practices and anti-littering, which portrayed litterers and non-recyclers, for example, polluting a clean, healthy China, a sense of national pride might come about which would encourage individuals to attribute patriotism to environmentally friendly garbage collection practices.

**CONCLUSION**

The amount of garbage that is generated in China is staggering and that number is on the rise. China is becoming wealthier, and its citizens are consuming more. China should not make the same mistakes the United States made with respect to over-consumption and garbage generation. According to the former Prime Minister of Norway and former Chair of the United Nation’s World Commission on the Environment and Development, “[i]t is simply impossible for the world as a whole to sustain a Western level of consumption for all. In fact, if 7 billion people were to consume as much energy and resources as we do in the West today, we would need ten worlds, not one, to satisfy our needs.” China is the most populous nation in the world. The United States and China should be examples for the rest of the world on smart garbage management, and lead the way in its continued development.

---


TAMING THE DRAGON: HOW CORPORATIONS IN CHINA CAN BE EMPLOYED TO FURTHER ENVIRONMENTAL RISK MANAGEMENT

Kate Swartz & Guan Lin*

Table of Contents

Introduction ............................................................................................................. 98
I. The Enforcement Problem ............................................................................. 99
II. Corporations in China .................................................................................. 99
III. Corporate Supply Chains .......................................................................... 101
IV. Apple Case Study ....................................................................................... 102
V. GE Case Study ............................................................................................. 105
VI. How to Encourage Environmental Risk Management Systems and Ensure corporations comply with EHS laws within their Supply Chains ............................................................................................................. 109
   A. Analysis of the Green Credit Policy ...................................................... 110
      1. The Correlation between Financial Institutions and Industrial Facilities ............................................................................................................. 117
      2. Benefits of Implementing Systems Similar to the EPs and the GCP .................................................................................................................. 117
   B. National Policy of Internal EHS Management Systems ..................... 118

* This paper was funded by U.S. Agency for International Development and Vermont Law School US-China Partnership for Environmental Law. The paper was written as part of a Joint-Research Fellowship Program. Kate Swartz is a third year JD candidate at Vermont Law School in South Royalton, VT and Guan Lin is a third year Environmental Law student at the China University of Political Science and Law in Beijing, China. DISCLAIMER: The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.
INTRODUCTION

Environmental degradation in China has reached a critical point. The international community has begun to put pressure on the Chinese government to take steps toward remediation and prevention of future harm to the environment. The Chinese government has also recognized the severity of the situation, and, in response, created one of the world’s most comprehensive systems of environmental laws and regulations. Enforcement of those laws, however, is inadequate. This is due in part, but not limited to: corruption, lack of man power, lack of funding, vague drafting of regulations, cultural barriers, and the immense population and land area of the country. In an effort to remedy lack of enforcement, the Chinese government has targeted specific sectors, requiring internal implementation of environmental risk prevention mechanisms. With help from the International Finance Corporation (IFC), the Chinese government has regulated the financial sector. The Green Credit Policy (GCP) requires all banks and financial institutions to internally implement systems for environmental risk management of loans and project finance. Currently, the Chinese government has also proposed, but not implemented, an administrative rule pertaining to internal environmental management of major industrial sources. Although this would require internal environmental risk management systems similar to the GCP, enforcement of industrial sources will face different challenges. While internal implementation within financial institutions can be monitored through loan and project finance statistics, industrial environmental risk management monitoring is much more complex. There are a much larger number of industrial sources in China than financial institutions, and ensuring that internal systems are functioning properly will require increased monitoring resources and infrastructure. In order for this or a similar regulation to succeed, the Chinese government will need to take collaborative measures to ensure implementation. With an enormous presence in China and the international community, corporations must play a role in enforcement. The Chinese government can and must employ corporations as collaborative
partners to ensure internal implementation of Environmental Health and Safety (EHS) management systems within Chinese industries.

I. THE ENFORCEMENT PROBLEM

Unlike in the United States where the U.S. Government is able, in part, to play the role of a third party inspector for compliance with environmental laws and regulations, lack of allocated manpower and financial resources prevents the Chinese government from conducting adequate inspections. EHS law is highly regulated in China, but enforcement is very low.¹ Lack of enforcement is due largely to EHS not being a government priority, which leads to inadequate resources and infrastructure.² China’s large population makes it difficult for inspectors to reach every company on a consistent basis; penalty application is challenging to identify and apply. Superficial numbers in monitoring reports often go unchecked,³ and enforcement often varies drastically between local, provincial, and central governments.⁴ Consequently, companies are not very motivated to comply with the law. In order for enforcement to be effective, the Chinese government must invest more money in resources and infrastructure, and encourage local competition for compliance.⁵

II. CORPORATIONS IN CHINA

As of March 2009, there were over 9,717,700 enterprises in China, including their branches and affiliations.⁶ Domestic enterprises accounted for 9,283,800, including 6,642,700 private companies. Foreign-invested enterprises accounted for 433,900.⁷ Experts project the number of

². Telephone Interview with Qin Zhigang, EHS Director, North Asia, GE Corporate (Dec. 14, 2010). There have been only about 30 years of industrial legislation in China and, while it is easy for the government to learn and legislate, it is difficult to implement and enforce. Id. Often, the drive to meet specific provincial economic growth goals outweighs the need to comply with EHS laws and regulations.
³. Id.
⁴. Interview with Peixiang Peggy Long, supra note 1.
⁵. Interview with Qin Zhigang, supra note 2.
⁷. Id.
multinational corporations (MNCs) that operate in China will only increase now that China is a member of the World Trade Organization.\textsuperscript{8}

Traditionally, only those factories that emitted pollutants directly would be compelled to bear environmental responsibility; but with the development of societies, economies, and the global community, other institutions are now being held responsible for their actions—including banks, corporations, and MNCs. Localization has increased the influence of MNCs on China’s environment. Since the market status of China drastically improved, MNCs doing business in China have adjusted their business strategies to include local products.\textsuperscript{9} Localization involves many sectors including research, production development, management, and marketing.\textsuperscript{10} “Through more active localization, multinational corporations can make full use of local operating resources, reduce production costs, achieve more market penetration opportunities, and control the market in a more comprehensive way.”\textsuperscript{11} With such a large influence in China, it is in the government’s best interest to monitor and control how the actions of MNCs and domestic corporations affect the country and the industries with which they interact.

The influence of MNCs on China’s environmental protection is not purely harmful. In fact, MNCs are motivated to lobby for enforcement of environmental laws and regulations.\textsuperscript{12} “Investment plays a role in improving China’s environmental practices” and “many [MNCs] choose the most environmentally sound technologies and undertake thorough environmental impact assessment voluntarily.”\textsuperscript{13} Almost all MNCs and corporations consider their reputation one of their most important assets; they want to sell themselves to China and the global market, and therefore comply with environmental laws and regulations.\textsuperscript{14} However, “while all [MNCs] are motivated in part by protecting their reputations, they also have a purely economic incentive to lobby China’s government for stricter

\begin{itemize}
\item \textsuperscript{8} Adam Briggs, China’s Pollution Victims: Still Seeking a Dependable Remedy, 18 Geo. Int’l Envtl. L. Rev. 305, 320 (Winter, 2006); China was admitted into the World Trade Organization on Dec. 11, 2001. See World Trade Organization, China, Member Information, http://www.wto.org/english/thewto_e/countries_e/china_e.htm (last visited March 15, 2011).
\item \textsuperscript{10} Id.
\item \textsuperscript{11} Id.
\item \textsuperscript{12} Briggs, supra note 8, at 319.
\item \textsuperscript{13} Id.
\item \textsuperscript{14} Telephone Interview with Colleen Connor, Manager and Counsel, GE Water and Process Technologies, General Electric Company (Dec. 9, 2010).
\end{itemize}
environmental enforcement against their less-scrutinized Chinese competitors."15 Foreign investors in China often complain that they cannot compete with local enterprises because the local enterprises do not comply with environmental laws and there is no enforcement.16 Relatively, it is much more expensive for foreigners to “do business in China and compete.”17 Additionally, MNCs have an incentive to comply with environmental laws to please their stakeholders.18 “[T]o the extent that a business can increase its positive impacts (value-creation) or decrease its negative impacts, it will increase its value propositions, its competitive advantage in the market, and better manage its risk.”19 Therefore, in order to fairly compete with Chinese industries and corporations while at the same time maintaining a good reputation and pleasing stakeholders, MNCs should encourage compliance with EHS laws and regulations across the board in China.

III. CORPORATE SUPPLY CHAINS

Corporations often contract with industrial facilities for parts or materials, and therefore are linked through a supply chain. When one company purchases parts or materials for manufacturing from another facility, that facility is part of their supply chain. To what degree corporations are responsible for their supply chain’s compliance with laws and regulations is a controversial issue; that they dramatically influence their supply chains, however, is undisputed. The level of EHS that corporations and companies require of their suppliers dictates how much the supplier feels they must be in compliance to continue business. Additionally, the price at which corporations and companies purchase products from their suppliers indicates how much environmental risk can be calculated into the sale. Because an increasing number of corporations and MNCs contract with Chinese industrial facilities, corporations are an underutilized tool for enforcing compliance with EHS laws and regulations

---

16. Id.
17. Id.
18. “Stakeholders are any person or interest group, including governments, upon which the business has an impact or that has the power to impact the business.” Mark A. Buchanan, Social Contract, Corporate Social Responsibility, Counsel and the ISO 26000 Guidance on Social Responsibility, 52 Advoc. 17, 17 (October 2009).
19. Id.
within their supply chains, especially considering their large presence in China.

IV. APPLE CASE STUDY

The following case study of Apple Inc.'s presence in China illustrates the effect corporations have on the EHS management of their suppliers. Apple has recently been cited as one of the most harmful MNCs in China. In a new report, issued as a collaborative work by several Chinese non-governmental organizations (NGOs), Apple was criticized for many EHS violations, lack of transparency, and utter lack of accountability for its supply chain. Apple’s website states: “Apple is committed to ensuring that working conditions in Apple’s supply chain are safe, that workers are treated with respect and dignity, and that manufacturing processes are environmentally responsible.” In practice, however, it seems that Apple does not follow through with these promises.

Apple does not have any large-scale manufacturing facilities of its own, and therefore manufactures almost all of its products through suppliers. Due to a lack of transparency, Apple has made it nearly impossible to identify which facilities are actually its suppliers. Additionally, the corporation refuses, in most instances, to take responsibility for the actions of any of its known suppliers. Although Apple has a legitimate claim to secrecy surrounding its research and development, when it comes to EHS, “these problems are not related to the creation of original technology and materials and given that they affect other people, they should not be treated as commercial secrets.” When confronted, the corporation stated: “Apple has a long standing practice of not disclosing our supply base.” It is hard

22. Id. at 5.
23. Id. at 23.
24. Id. at 19; see id. at 20–21 (“In 2010, a coalition of 34 Chinese environmental protection organizations communicated on multiple occasions with 29 IT brands in order to promote solutions to pollution problems within the IT industry. During this nine month process, both foreign and Chinese organizations, as well as the poisoned workers, experienced firsthand Apple's ability to evade and deflect questions.”).
25. Id. at 23.
26. Id.
not to suspect that Apple uses this secrecy “to avoid undertaking its environmental and social responsibilities.”

In the recently issued report, *The Other Side of Apple*, Apple’s suppliers were cited for many EHS violations: lack of reporting and compliance with laws and regulations, use of dangerous chemicals paired with inadequate occupational protective gear, hazardous waste material run-off, general pollution, negative effects on local communities due to pollutant emission levels, violation of privacy, violation of work hours, and suicides due to labor violations. One example occurred in 2008 at Lian Jian Technology. This factory supplies touch screens to Apple and one day began using the chemical *n*-hexane to clean the touch screens. The supplier violated the *Law on the Prevention and Control of Occupational Disease* “by not alerting authorities or notifying its employees before they began using a toxic chemical. They also did not supply appropriate protection equipment to their workers.” As a result, many of Lian Jian’s employees were severely poisoned and hospitalized.

Considering that Apple does not manufacture most of its products at its own facilities, it is nearly impossible not to hold it responsible for the actions of its suppliers. Because Apple outsources most of its manufacturing processes, it “creates fierce competition among the enterprises, placing Apple in a strong position as a large buyer. If Apple’s purchasing only considered quality and price and not social responsibility, they would actually put pressure on the supply chain, making them sacrifice the environment, health, and worker standards to reduce costs and to win Apple’s business.” Apple’s products have become such a “hot commodity” that its power to set pricing could deter suppliers from being socially responsible. The economist Lang Xianping explains as follows:

In the first half of 2006, Apple sales were 8.5 million, an increase of 61%, and more than 10 billion dollars in revenue. Apple made so much money, now I ask you, how much did Foxconn make? With every Apple product

---

27. Id.
28. Id. at 5–18.
29. Id. at 8.
30. Id.
31. Id. at 29.
32. Id.
33. “From January to May 2009 Apple's largest supplier in China, Foxconn, had incidents whereby 12 employees successively jumped from buildings over a period of less than six months . . . Random checks of 5,044 Foxconn workers by the Shenzhen Human Resources and Social
Foxconn earns 4 US dollars, and Apple takes the other 99%. What does this 4 US dollars include? It covers electricity expenses, equipment expenses, and the cost of materials. Labor costs are calculated by Apple according to where Foxconn is situated – in Shenzhen, the minimum amount of payment is multiplied by each product’s maximum working hours. Foxconn’s decisions such as labor costs, raw materials, and manufacturing processes all involve decisions made by Apple.34

Since Apple refuses to take responsibility for its supplier’s actions or to disclose information regarding its relationships with suppliers, it is easy to speculate that it could be taking “advantage of the lack of transparency in globalized sourcing . . . to externalize costs on the environment, the workers and the communities to maximize its super profits.”35

In order to illustrate the severity of Apple’s violations, The Other Side of Apple report compared Apple to other international brands and to other IT brands operating in China.36 In 2007, the Green Choice Alliance got together with MNCs to conduct independent investigations of their Chinese suppliers and to encourage them to take measures to correct EHS violations and disclose information.37 Unlike Apple, many of the MNCs, including Walmart, Nike, Esquel, GE, and Unilever, have already taken action to remedy the issues found during the investigations.38 Notably, GE has “already pushed 15 companies to issue statements and make improvements,” conducted “several rounds of communications with the NGOs to review third party audit standards and to discuss how its internal audit team could use the NGOs database to identify violations,” and plans

Security Bureau showed that 72.5% of workers worked overtime exceeding the limit, with each worker working 28.01 more hours than the legal overtime limit.” Id. at 15–16.

34. Id. at 29.
35. Id.
36. See id. at 24. Stating that on:
March 22nd, 2007, twenty-one Chinese environmental protection groups jointly launched the Green Choice Alliance (GCA) and developed a green choice supply chain management system. The GCA works together with multinational companies to undertake independent investigations of their Chinese suppliers, as well as encourage these suppliers to make corrective measures and disclose corporate information. Nike, GE, Wal-Mart, Esquel, Unilever and a number of large enterprises are currently working together with the GCA, using the NGO’s ‘China Pollution Map Database’ to strengthen the environmental management of their supply chain.

37. Id. at 24.
38. Id. at 24–5.
to “check the NGO database before signing a new contract with a supplier.”39 Additionally, 34 Chinese NGOs conducted rounds of communication and discussion with 29 IT brands operating in China.40 They found that Apple is not alone in its violations, however “the major difference between Apple and other I.T. brands is that none of the others were as evasive and resistant. Instead, some leading I.T. brands have taken positive steps to promote transformation of suppliers, generating the much-needed motivation for pollution control.”41

It is clear from this case study that corporations have a large impact on the actions of their supply chain. The actions of a corporation could, in fact, prevent a supplier from being able to take adequate measures to meet EHS standards. If corporations choose to take responsibility for their supply chain’s compliance with EHS regulations, then they can play an important role in the future of China’s environment and the health of its people. The following section, a case study of General Electric’s (GE) work in China, illustrates how a corporation’s actions can improve EHS compliance.

V. GE CASE STUDY

GE exemplifies how an MNC complies with and ensures that its supply chain is in compliance with China’s laws and regulations. GE’s exemplary work with its suppliers includes: consistent and continual audits of suppliers;42 contractual obligation of compliance with suppliers;43 training and assistance;44 and collaboration with government, NGOs, international organizations, and other MNCs.45 GE states on its website that it is “committed to conducting . . . business in China successfully and ethically, holding our employees, our suppliers and our partners in China to the same rigorous standards we do wherever we do business.”46

39. Id. at 5.
40. Id.
41. Id. at 26. See also id. at 26–28 (providing detailed information on other IT brands).
43. Interview with Qin Zhigang, supra note 2; Supplier Expectations, supra note 42.
45. Telephone Interview with Ellen Proctor, Senior Counsel—Compliance & Regulatory, Asia GE Corporate (Jan. 12, 2011).
GE has five million shareholders and its stocks are some of the most widely held in the world. It is comprised of over 288,000 employees, has been in China for over 100 years and employs “more than 11,000 people across 53 locations in greater China.”\textsuperscript{47} The corporation aims to be a “responsible member of the community” and is currently working with China’s National Development and Reform Commission (NDRC) to “drive environmentally sound technologies in China including cleaner-coal power generation, renewable energy, water reuse and desalination, high-efficiency and low-emission aircraft engines and locomotives, energy-efficient lighting and power distribution.”\textsuperscript{48} All GE suppliers are expected to protect the environment, “not adversely affect the local community,” and to obey laws that “require them to treat workers fairly, respect freedom of association, prohibit discrimination and harassment, provide safe and healthy working environment, and protect environmental quality.”\textsuperscript{49}

Qin Zhigang, the North Asia EHS Director at GE Corporate, explains that the corporation makes it very clear in the supplier’s contractual responsibilities that they must meet local EHS requirements as well as some additional human rights requirements.\textsuperscript{50} GE recognizes that provincial laws are often more stringent than the national laws and therefore suppliers must be in compliance with local laws and regulations.\textsuperscript{51} GE, in turn, has its own set of requirements to ensure that EHS issues are properly addressed. If a local or national law is unavailable or does not exist, then suppliers are required to fulfill the GE requirement.\textsuperscript{52} Whenever there are conflicting requirements, suppliers are required to meet the more stringent one.\textsuperscript{53}

In order for a manufacturer to become a supplier for GE, it must undergo a strict review process to ensure that it is in compliance with, or capable of complying with, all relevant EHS laws and regulations.\textsuperscript{54} When a manufacturer is being considered, its facilities are reviewed based on strict criteria, and if risky operations are identified, then the facilities are looked at more closely.\textsuperscript{55} A supplier quality engineer (SQE) conducts an EHS audit

\textsuperscript{48} Doing Business in China, supra note 46.
\textsuperscript{49} Supplier Expectations, supra note 42.
\textsuperscript{50} Interview with Qin Zhigang, supra note 2; Supplier Expectations, supra note 42.
\textsuperscript{51} Interview Cheng Ge, supra note 42.
\textsuperscript{52} Id.
\textsuperscript{53} Id.
\textsuperscript{54} Interview with Colleen Connor, supra note 14.
\textsuperscript{55} Id.
of each applicant facility in order to ensure proper compliance with EHS requirements. If the facility is brought into compliance, then the facility will be approved as a GE supplier, but it will continue to face audits and reassessments on a variable schedule. In 2009, GE assessed more than 2,600 suppliers and reassessed more than 1,750. As a result of the assessments, it has required “thousands of suppliers to obtain permits, improve their environmental performance and come into compliance with law.”

The Supplier Responsibility Program, through which suppliers are approved after EHS audits, started in the 1990s, but has evolved in the years following. Ellen Proctor, former Director and Counsel for GE’s Environmental, Health, and Safety Division in Asia, noted that it has been an evolutionary path and that there is no one-size-fits-all structure for each supplier. Although the auditing system has progressed to better handle the challenges of diverse suppliers, the corporation still faces many obstacles including supplier falsification. Recently, when a GE auditor conducted a site visit in China, all of the employees at the site were wearing safety glasses with tags on them. After conducting the audit and noting that all requirements were fulfilled, the auditor feigned leaving the facility and when he ran back in, the glasses were already off and back in a collection box. Other challenges mentioned by GE employees include: lack of a systematic approach amongst suppliers to ensure sustainable new development, large and complex supply chains, and low levels of training and leadership.

GE has initiated several programs and projects in an attempt to remedy these issues. First, GE holds an annual supplier summit that brings together leaders from all facilities that are contractual suppliers. This summit facilitates sharing of information between suppliers and allows GE to provide training to suppliers. Additionally, GE brings in government

56. Interview with Cheng GE, supra note 42.
57. Interview with Colleen Connor, supra note 14.
58. Interview with Cheng GE, supra note 42.
59. Supplier Expectations, supra note 42.
60. Id.
61. Interview with Ellen Proctor, supra note 45.
62. Id.
63. Interview with Michael Patenaude, supra note 47.
64. Interview with Ellen Proctor, supra note 45.
65. Interview with Colleen Connor, supra note 14.
66. Id.
representatives to inform the suppliers of new and proposed regulations.\textsuperscript{67} Second, GE “spends significant time each year training both operations leaders and EHS professionals on how they can be more effective in implementing EHS programs.”\textsuperscript{68} GE has collaborated with NGOs and other organizations to create self-sustaining training programs, most notably the Environmental, Health and Safety Academy in Guangzhou.\textsuperscript{69} Third, GE makes an effort to work with the government to share best practices and coordinate supplier requirements.\textsuperscript{70} Through its work in China, GE has learned that collaboration is an important mechanism, and that it is good business to know the regulators and the community in which you operate.\textsuperscript{71}

In the future, GE hopes to help suppliers find a more systematic approach to EHS management.\textsuperscript{72} From 2006 to 2008, the corporation found that “improvements in the EHS and labor practices of . . . suppliers were most sustainable when they had management systems in place to monitor, measure and improve performance.”\textsuperscript{73} Thus, in 2009, GE incorporated an evaluation of suppliers’ management systems into its supplier assessment program, for instance “whether there was a dedicated staff to oversee EHS and labor compliance.”\textsuperscript{74} Colleen Connor, EHS Manager and Counsel for GE Power & Water, explains that GE has a very hands-on approach and tries to have reporting throughout the supply chain—from EHS manager to plant manager to MNC.\textsuperscript{75} She notes that an important part of any EHS management system is ensuring that managers report to an authoritative figure in order to implement change throughout the facility. She also noted that it is important to keep environment, health, and safety management together because they are so inextricably interconnected.\textsuperscript{76}

By enforcing compliance with EHS laws and regulations throughout its supply chain, GE’s actions benefit not only China and the environment, but also its own business. GE has built a valuable reputation for itself in China and has protected itself from environmental risk—including degradation of its own reputation within China and abroad.

\textsuperscript{67} Id.
\textsuperscript{68} EHS Training Units Completed, supra note 44.
\textsuperscript{69} Interview with Qin Zhigang, supra note 2.
\textsuperscript{70} Interview with Cheng GE, supra note 42.
\textsuperscript{71} Interview with Ellen Proctor, supra note 45.
\textsuperscript{72} Id.
\textsuperscript{73} Supplier Expectations, supra note 42.
\textsuperscript{74} Id.
\textsuperscript{75} Interview with Colleen Connor, supra note 14.
\textsuperscript{76} Id.
Every project and activity in which a business engages involves environmental risk (the possibility of causing damage to the environment or the consequences of non-compliance with environmental laws and regulations).\(^7\) When a corporation’s actions cause serious harm to the environment, it faces consequences. First, corporations face State-imposed fines and mandatory remedial action based on environmental laws. These consequences range from initial sanctions to pollution charges and fines, remedial requirements, or business license/permit revocation. Second, as citizens become increasingly aware of environmental regulations and legal methods for holding businesses accountable for their actions, businesses become more likely to face lawsuits where they may be forced to pay for their environmentally destructive actions. Corporations that assume high environmental risk may face issues of solvency, bankruptcy, or dissolution, as well as damage to their reputation. These outcomes could lead to a decrease in consumer interest and difficulty in obtaining qualified employees as well as national and international support. For corporations, contracting with suppliers that assume high environmental risk means that they will in turn assume high risk; and since it is in the corporation’s best interest to take all steps necessary to avoid assuming risk, it is clear why ensuring its supply chain complies with EHS requirements is a smart economic decision for corporations like GE.

VI. HOW TO ENCOURAGE ENVIRONMENTAL RISK MANAGEMENT SYSTEMS AND ENSURE CORPORATIONS COMPLY WITH EHS LAWS WITHIN THEIR SUPPLY CHAINS

To preserve and protect China’s environment and the safety of Chinese workers, industrial facilities must comply with EHS laws and regulations. Experts agree that, in order to ensure compliance, facilities must implement internal EHS management systems.\(^8\) As shown through the above case

---

78. While working with industrial facilities, ISC came to the conclusion that a main reason for low levels of compliance with EHS regulations is due to lack of sufficient EHS management. Interview with Matthew Degroot, Senior Program Officer, China, Inst. for Sustainable Cmtys., in Montpelier, Vt. (Oct. 27, 2010). ISC convened a roundtable discussion with their multinational partners in an attempt to discover what the largest barrier is between companies that have proper EHS compliance and those that do not. Id. The main conclusion from the roundtable was that each company needed an “internal champion,” someone in the company to handle EHS management who not only understands the technical requirements of EHS but also how to manage and why it is sensible to invest in proper EHS compliance. Id. In 2006-08, the corporation found that “improvements in the EHS and labor practices
studies, corporations have a significant influence over the industrial facilities with which they work. Therefore, the Chinese government should employ corporations as collaborative partners to ensure internal implementation of EHS management systems within Chinese industries.

There are two questions we hope to answer: how to encourage Chinese industries and corporations to implement EHS risk management systems and how to encourage corporations to play an authoritative role in ensuring that these systems are executed and utilized throughout their supply chains. The answers go beyond enactment of law.  

In order to answer our questions, this article will first examine how the Chinese government has regulated the financial sector through mandatory environmental management systems for loans and project finance (the Green Credit Policy). Second, we will use analysis of the Green Credit Policy (GCP), case studies and discussions with professionals to explain five proposed solutions to the lack of industrial EHS regulatory compliance in China. These solutions include: (1) government promulgation of a national policy of mandatory internal EHS management systems in major industrial sources; (2) government incentives; (3) corporations as a hierarchical authority to enforce EHS standards; (4) collaboration between MNCs, government, NGOs, international organizations, and industrial facilities; and (5) training of EHS managers, facilities, and MNCs.

A. Analysis of the Green Credit Policy

In order to support environmental protection measures, the Chinese government promulgated the GCP, which requires Chinese banks and financial institutions to provide low interest rate loans to businesses and organizations that develop pollution control facilities or engage in ecological protection (through development of energy conservation mechanisms, green manufacturing, eco-agriculture, etc).  

The Equator Principles (EP) are the historical and international source of the GCP.

---

79. Interview with Ellen Proctor, supra note 45.

80. He Dexu & Zhang Xuelan, Some Thoughts about Commercial Banks Carrying Out GCP in China, SHANGHAI FIN. 12 (2007). The GCP was initiated when the People’s Bank of China issued the Notices on Implementation of Credit Policy and Promotion of Environmental Protection, which set forth rules on how financial institutions were to implement national environmental policies. Notices on Implementation of Credit Policy and Promotion of Environmental Protection (promulgated by China State Council), available at http://www.chinaacc.com/new/63/69/110/1995/2/35340249011625991955.htm. In 2005, the State Council promulgated a series of regulations and policies relating to the idea of the GCP including the
The EP is a voluntary international regulation\(^{81}\) aimed at developing and managing social and environmental risks related to project finance.\(^{82}\)

\(^{81}\)Implementing Scientific Concept of Development for Promoting Environmental Protection, in which the government proposed the establishment of a comprehensive policy system to support environmental protection—with a green credit policy explicitly listed as one of the means for achieving that goal. Guo Wu Yuan Guan Yu Luo Shi Ke Xue Fa Zhan Guan Jia Qiang Huan Jing Bao Hu De Jue Ding (国务院关于落实科学发展观加强环境保护的决定) [Implementing Scientific Concept of Development for Promoting Environmental Protection] (promulgated by China State Council, Dec. 3, 2005, effective Feb. 14, 2006) XINHUANET NEWS, Febr. 14, 2006, available at http://news.xinhuanet.com/politics/2006-02/14/content_4179931.htm. Additionally, a number of departments and sections of the State Council—such as the People’s Bank of China (PBC), the Environmental Protection Administration (named the Ministry of Environmental Protection), and the China Banking Regulatory Commission—issued administrative rules and policies, respectively. The administrative rules and policies can be found at the department’s respective websites: www.pbc.gov.cn, www.cbrc.gov.cn, www.zhb.gov.cn. In July 2007, the State Environmental Protection Administration (today named the Ministry of Environmental Protection of the People’s Republic of China (MEP)), in collaboration with the People’s Bank of China and the CBRC, issued the Opinions on Implementing Environmental Protection Policies and Rules and Preventing Credit Risks, formally establishing the Green Credit Policy system in China. Opinions on Implementing Environmental Protection Policies and Rules and Preventing Credit Risks (promulgated by the MEP 2007), available at http://websearch.mep.gov.cn/info/gw/huanfa/200707/t20070718_106850.htm. The GCP stipulates that:

[A]ccording to the state's environmental, economic and industrial policy, commercial banks, policy banks and other financial institutions should provide loans with low interest rates to support those enterprises or institutions which are developing, producing pollution control facilities or engaging in ecological protection and construction, development and use of energy, production of circular economy, green manufacturing and eco-agricultural, while these financial institutions also should limit the loans and provide loans with high interest rates to new projects of pollution enterprises as punitive measures.


82. See Li Ruimin, What are the Equator Principles, INT’L FIN., 5 (2007) (discussing that the Equator Principles are voluntary guidelines that banks and financial institutions choose to sign on to and implement within their organization); see generally THE EQUATOR PRINCIPLES, supra note 81 (describing how the EPs are a “financial industry benchmark for determining, assessing and managing social & environmental risk in project financing”); see also id. at 1n.1 (“Project finance is ‘a method of funding in which the lender looks primarily to the revenues generated by a single project, both as the source of repayment and as security for the exposure. This type of financing is usually for large, complex and expensive installations that might include, for example, power plants, chemical processing plants, mines, transportation infrastructure, environment, and telecommunications infrastructure. Project finance may take the form of financing of the construction of a new capital installation, or refinancing of an existing installation, with or without improvements. In such transactions, the lender is usually paid solely or almost exclusively out of the money generated by the contracts for the facility’s output, such as the electricity sold by a power plant. The borrower is usually an SPE (Special Purpose Entity) that is not
Financial institutions that adopt the EP do so “in order to ensure that the projects we finance are developed in a manner that is socially responsible and reflect sound environmental management practices.”

Adopting financial institutions “commit to not providing loans to projects where the borrower will not or is unable to comply with . . . [the] respective social and environmental policies and procedures that implement the Equator Principles.”

Each adopting financial institution individually implements the EP; however, the implementation is structured and guided through coordinated procedures and documents continually updated on proper operation. In order to create a level playing field and ensure one bank is not viewed as stricter than another, it is in the adopting institution’s best interest to have a certain amount of coherence with other adopting institutions. Nevertheless, the procedures and management systems of each adopting institution do vary, as do the levels of priority allocated to implementation of the EP and the overall effectiveness of implementation.

83. The Equator Principles, supra note 81, at 1.
84. Id.
86. Telephone Interview with Eliza Eubank, Assistant Vice President, Env’t Risk Mgmt., Citigroup Inc. (Nov. 4, 2010).
87. Id.
Similar to the EP, the purpose of the GCP is to increase funding to enterprises and institutions that can promote environmental protection and energy efficiency, and to decrease funding to enterprises and projects that are wasteful of natural resources and harmful to the environment. The GCP has three main components: (1) “strengthening commercial banks’ management of environmental performance”; (2) “environmental information sharing between the environmental authority and [the] financial sector”; and (3) “responsibilities for violation of the policy.” This rule is intended to increase emission reduction and prevent credit risk by improving coordination of environmental protection initiatives, enforcing environmentally-conscious granting of credit, and promoting environmental supervision. The GCP not only prohibits financial institutions from granting credit to projects that are not approved through environmental impact assessment or facility review, but also encourages banks to provide loans to environmentally friendly projects.

The GCP regulation requires each financial institution to internally implement a management system to enforce its requirements. Because the
rules of the GCP set more of a guideline than direct requirements, financial institutions must issue their own specific rules and procedures as a first step in operation before actual execution of the regulation. To assist financial institutions in implementation of the GCP, the China Banking Regulatory Commission (CBRC) issued Guidance on Credit Issues about Energy Conservation and Emission Reduction to advise institutions on how to enact internal regulations. These regulations include: work programs for risk response to high-consumption and high-emission enterprises, credit policy and operating rules, and specific procedures and rules regarding energy conservation and emission reduction. Furthermore, the CBRC encourages the board of trustees of each bank and financial institution to designate specific and professional personnel to be in charge of the implementation of the GCP. In order to strengthen the application of the GCP, the CBRC conducts periodic on-site compliance audits and asks all financial institutions to issue a quarterly report on the progress made implementing “environmental risk management and loan classification based on environmental impacts.” Mr. Ye Yanfei, Deputy Director of the Statistic Department at the CBRC, explained that the:

CBRC partners with other governmental agencies and a number of international organizations, including IFC and Equator Banks to organize training and workshops allowing banks to exchange experience and gain exposure to international best practices in managing environmental and social risks. CBRC has set up a web-based information system on enterprise environmental performance.

Backward Production Capacity (promulgated by the People's Bank of China and China Banking Regulatory Commission, 2010) at 170. Since China has yet to achieve its targets for emission reduction and energy conservation and credit risks related to environmental issues still exist, more regulation is necessary and likely to be promulgated under the GCP.

95. Id.
96. Id.
Most . . . banks can access . . . this portal and check information about their potential borrowers and even existing clients.98

Due to grave environmental degradation in China, criteria under the GCP must be strict in order to prevent further harm. Since all financial institutions in China are required to comply with the GCP, there is less fear of competition. Mr. Ye Yanfei explains:

[T]he key to successful adoption of a Green Credit Policy is to demonstrate how green lending increases profits and reduces risk, thus generating economic gain to lenders while simultaneously supporting better environmental and social conditions for the greater public. The Green Credit Policy not only responds to China’s demand for curbing pollution and energy consumption, but also appeals to the natural instinct of banks to generate reliable revenues from lending and minimize lending risks to enterprises that do not adhere to environmental regulations or that cause catastrophic incidents.99

The GCP has “enroll[ed] the entire banking sector in the effort to improve environmental quality;”100 however, it still faces obstacles before it can be a “success.” The main deficiency of the GCP is lack of adequate governmental enforcement. Due to the government’s “assigned high priority to economic development goals that may end up undercutting environmental targets,” few resources have been allocated to enforcing the GCP.101 This has been accentuated by the recent global economic recession.102 The “lack of disclosure on environmental issues makes it very difficult to analyze the real effectiveness of their policies, but some banks have indeed cut lending to polluting and energy intensive industries.”103 Thus far, the most successful implementation of China’s green regulations as well as international sustainability norms has been seen in China’s small-

---

98. Id.
99. Id. at 2.
100. Matisoff & Chan, supra note 88.
101. Id.
103. See id. (describing how the lack of transparency of environmental issues here refers to lack of transparency by the national government, not necessarily the individual bank’s reporting to the national government).
and medium-sized banks. This is likely due in part to having “fewer credit lines to the largest state conglomerates, and hence more capacity to be flexible and innovative.”

Regardless of the challenges the GCP still faces before reaching its potential, enactment of this regulation was a step in the right direction towards achieving increased sustainable development and environmental protection within China. The GCP can and should act as a model for other sectors, including industrial. The GCP has effectively made internal environmental management systems mandatory within the entire financial sector—including providing guidance and procedure and encouraging the hiring of specialized personnel. The GCP was executed through collaboration of government entities, as well as international and domestic related organizations; it provides training for implementing facilities; it encourages information sharing; it appeals to the nature of the business to perpetuate existing needs; and, through mandatory compliance, it has reduced the sector’s fear of being less competitive due to implementation of environmental risk mechanisms. Application of the purpose and procedures of the GCP could be effective in other sectors of Chinese society, and it could eventually act as a model to the international community. The industrial sector is one of the most environmentally harmful sectors in Chinese society and should be regulated, as was the financial sector.

Specifically, internal EHS management systems can and should play a critical role for both the financial and industrial sectors’ pursuits of environmental social responsibility. Experts agree that the industrial sector’s low level of compliance with EHS laws and regulations is due in large part to a lack of adequate internal environmental management. Many Chinese industries, however, are opposed to implementing additional environmental management procedures because they fail to see how the immediate benefits will outweigh the costs. Even those that have systems refuse to update and ensure proper functioning because there is no authoritative oversight to encourage or enforce such application.

Through the GCP, the Chinese government has begun to employ financial institutions to mitigate environmental risk throughout supply chains. The risk management mechanisms that are mandatory for financial institutions under the GCP could be valuable tools for industrial supply chains as well and could play an important role in encouraging implementation of EHS management systems.

104. Id.
105. See supra note 77.
1. The Correlation between Financial Institutions and Industrial Facilities

Financial institutions and industrial facilities are both specialized enterprises and, therefore, they should address environmental corporate social responsibility similarly. When faced with environmental issues, financial institutions try to reduce credit risk and, thus, the Equator Principles and the Green Credit Policy arose. Similarly, industrial management systems arose when the industrial facilities took steps to mitigate operation risk and comply with laws and regulations.

Financial institutions and corporations in China also have similar supply chains. Financial institutions provide credit to companies that, in turn, purchase parts, products, or materials from other facilities (the suppliers). Corporations both purchase parts, products, or materials from other facilities and receive credit from financial institutions. Therefore, Corporations and financial institutions are often part of the same or similar supply chains. Just as financial institutions and corporations have similar supply chains, they have a similar impact on their supply chains. The level of EHS that corporations require of their suppliers dictates how much the suppliers feel they must be in compliance in order to conduct business; analogously, the level of EHS that financial institutions require in order to receive credit dictates how much companies feel they must be in compliance to begin new projects. Thus, both corporations and financial institutions should be employed to enforce and/or encourage EHS compliance throughout their supply chains.

2. Benefits of Implementing Systems Similar to the EPs and the GCP

The reasonable undertaking of social responsibility by companies, including banks, will not only decrease operating costs and increase profits, but also, in the long run, instill in the enterprises that recognize and address their social and environmental obligations a competitive advantage over those enterprises that avoid their responsibility. First, enterprises that address their social and environmental obligations will be prepared to handle unexpected risks, and, therefore, develop more sustainable business practices. Banks that fund projects that take into consideration social and environmental responsibility will, in turn, face fewer unexpected risks. Second, both banks and companies that recognize environmental and social responsibility will improve their reputation. A positive reputation is invaluable to banks and institutions alike. Superficially, investing in environmental protection may initially decrease profits, but it will make an indelible contribution by increasing the value of intangible assets, such as
reputation, that may lead to potential business opportunities. Finally, banks and enterprises concerned with environmental issues will be consistent with international trends in support of sustainable development. This will allow for a broader international platform and likely more national support as well.

It is important to note that, while EHS management systems are beneficial to the implementing companies, they are also significantly beneficial to the surrounding communities and to the world. The systems will improve environmental protection immediately and lead companies to look to less harmful operation methods for future business. The next five sections will discuss how to enforce and/or encourage internal EHS management systems within industrial facilities and encourage corporations to play an authoritative role in enforcing EHS laws and regulations.

B. National Policy of Internal EHS Management Systems

In order to initiate mandatory internal management systems within Chinese industries—similar to those required under the GCP—the Chinese government should pass a national law that requires mandatory internal implementation of EHS management systems in all major industrial sources. The government should also require Chinese corporations to ensure that their supply chains are in compliance with EHS laws and regulations. There are many Chinese corporations and companies in China that have similar supply chains to MNCs, and, while government incentives may be the only mechanism for encouraging MNCs to participate in their supply chain’s compliance, the Chinese government holds more authority over Chinese corporations and enterprises.

The Ministry of Environmental Protection proposed an administrative rule in 2008 entitled Notice on Development of Pilot Work for the System of Enterprises’ Environmental Supervisor. If adopted, this rule would establish and develop enterprises’ internal environmental management. The goal of the proposed rule is to enhance enterprises’ awareness of social and environmental responsibility, regulate enterprises’ environmental management, and improve enterprises’ environmental behavior. Due to lack of transparency, however, it is unclear when, if ever, this proposed rule will be implemented or whether further steps have been taken in its

107. Id.
development. EHS management systems are not a priority for the Chinese government; nevertheless, such systems are essential to the protection of the Chinese people and their environment. The Chinese government should, therefore, use its authority to enforce implementation and regulate environmental management systems within industrial sources.

A law requiring mandatory internal EHS management for major industrial sources should be promulgated nationally, and the creation of such a law should be a collaborative effort. Collaboration will ensure that the law addresses all issues necessary to guarantee that EHS management systems function properly and are not just for show. Two important aspects of all EHS compliance management are data distribution and transparency. First, the law should require that EHS management systems provide for monitoring and reporting to the government and the public. Second, EHS managers should have authority to implement and correct problems within the facility, not just identify them. The EHS managers must have a clear line of communication with the company owner to ensure that issues are reported and addressed. Additionally, the EHS manager and management system should not be independent of the facility. The EHS manager should guide and train all employees, and everyone at the facility should have EHS roles. The manager should be responsible for communicating to the facility and its employees the benefits of the system and why the policies he or she implements are important and beneficial to the workers and the facility.

Nevertheless, even if the Chinese government passed a law requiring internal EHS management systems in industrial facilities, then the issue of enforcement of proper implementation would still be a challenge. For this issue, we provide three solutions: MNCs as a hierarchical authority, government incentives for both MNCs and Chinese industries, and collaboration.

---

108. Email Interview with Qin Hu, Environmental Defense Fund in China (Dec. 6, 2010 and Dec. 13, 2010); Department of Environmental Protection Files, MINISTRY OF ENVTL. PROT. OF THE PEOPLE’S REPUBLIC OF CHINA, http://www.zhb.gov.cn/info/bgw/bwj/200809/t20080923_129268.htm (last visited Sep. 30, 2011). The authors of this article were unable to find additional information regarding this proposed rule and the possibility of its promulgation or further development.

109. Interview with Ellen Proctor, supra note 45.

110. Interview with Michael Patenaude, supra note 47.

111. Id.

112. Id.

113. Id.

114. Id.


C. Corporations as a Hierarchical Authority to Ensure EHS Compliance within their Supply Chains

MNCs and Chinese corporations can and should play the role of a hierarchical authority within their supply chain. Corporations seek good reputations, economic savings, and cooperation of their supply chains; they also face pressure from environmentally-conscious consumers. For these reasons, the ability of a corporation’s supply chain to comply with EHS requirements is important to the survival of the corporation. Since corporations enter into contracts with their suppliers, they have the power to require suppliers to meet certain standards. As Qin Zhigang, EHS Director of North Asia at GE explained, it is a carrot and stick approach. Corporations should refuse to work with companies that do not comply with EHS standards. In order for a facility to earn a contract (the carrot), suppliers should be required to meet governmental standards as well as the corporation’s EHS requirements (the stick).

Vertically integrated factories do exist, but not everywhere. Many corporations do not have ongoing relationships with their suppliers and instead choose suppliers based purely on the cheapest product. This, however, is not a supply chain; instead, it is simply a range of suppliers without long-term relationships. It is beneficial to China, and to corporations, to foster relationships between enterprises and their suppliers. This can be facilitated through the collaborative efforts of corporations, NGOs, and international organizations. It will not, however, progress as quickly or find as much credibility without government influence.

D. Government Incentives

The Government should encourage EHS compliance by offering Chinese industries incentives to comply as well as MNCs and Chinese corporations incentives to ensure that their supply chains are in compliance with EHS laws and regulations. Government incentives should include: tax incentives, less time to wait on applications for permit approval, advanced notice of audits and inspections, subsidized training, and certification and recognition. In order for corporations to play an authoritative role within

115. Interview with Qin Hu, supra note 108.
116. Interview with Qin Zhigang, supra note 2.
117. Interview with Qin Zhigang, supra note 2.
118. Interview with Colleen Connor, supra note 14; Interview with Ellen Proctor, supra note 45; Interview with Cheng GE, supra note 42; Telephone Interview with Susan Keane, Environmental Analyst, NRDC (Dec. 16, 2010).
their supply chains and enforce environmental standards, they must foster relationships with their suppliers. The Chinese government should incentivize the creation of supply chain relationships and encourage corporations to only contract with facilities that will guarantee compliance with EHS laws and regulations.

First, the government should provide tax incentives to corporations that can prove their supply chain is in compliance. Second, if a corporation can show that they are in compliance and that their supply chain is in compliance with all EHS laws and regulations, then the government should advance the permit requests of those corporations to the top of the pile; the permit would still undergo the same rigorous review, but it would be more efficient for the compliant corporation.119 Third, corporations that show compliance should be given advanced warning of government audits and inspections. Again, the audits and inspections would be of the same caliber as noncompliant corporations. However, those that can show their supply chain is in compliance would be given advance notice of and possibly fewer audits as time went on.120 Fourth, the Chinese government should work with universities and organizations to subsidize EHS management training.121 Those industries that participate in training should be given priority by corporations for contractual relationships. Finally, corporations and industries that can show compliance should be recognized for their achievements through certification—to positively impact their reputation within China.122 Similar to the Voluntary Protection Program (VPP) under the Occupational Health & Safety Administration (OSHA) in the United States, the Chinese government should nationally recognize those facilities that achieve compliance with EHS laws and regulations.123

Corporations should also implement incentive programs within their supply chains to encourage compliance with EHS standards. Beyond contractual requirements, corporations can create preferred provider lists, blacklists, or gold star certification programs.124 If a supplier does well meeting EHS standards, they should be put on a priority supplier list that places them first in line to receive a new contract from the corporation. Likewise, if a supplier does not comply, then they should be put on a

119. Interview with Colleen Connor, supra note 14
120. Id.
121. Interview with Cheng GE, supra note 42. See section VII.F. (EHS Academy as an example organization.).
122. Interview with Colleen Connor, supra note 14; Interview with Ellen Proctor, supra note 45.
124. Interview with Susan Keane, supra note 118.
blacklist and denied contracts until they remedy their violations. In addition, corporations should provide certification or gold star recognition for good performance in order to positively impact the supplier’s reputation within the community.

E. Collaboration

One of the most important solutions we have identified is collaboration between MNCs, NGOs, international organizations, and the government. By working together, the government could capitalize on the resources of MNCs, NGOs, and international organizations, collectively. NGOs and international organizations could help facilitate training and information sharing between MNCs. MNCs could then correlate and unify supplier requirements and inspections in order to make the system of compliance less complex for Chinese industries.

The main barriers keeping Chinese industries from complying with EHS laws and regulations and MNCs from ensuring compliance throughout their supply chains are lack of information, unification, resources, and motivation. All of these things can be facilitated through collaboration. Charles Di Leva, Chief Counsel of the Environmental and International Law Unit of the World Bank, suggested that the World Bank and the IFC can and should play a larger role as facilitators. The Chinese government should utilize international organizations like the World Bank and the IFC as facilitators to encourage MNC workshops, collaborative research, and unification of standards.

The supply chains of industrial facilities are so long and complex that all willing and interested parties should be utilized to identify problems and unify solutions. When noncompliance is beneficial to a company because it gives them a competitive advantage over those who are in compliance, it is nearly impossible to convince the non-complying company to change their operations. By unifying standards, training, and best practices throughout the industrial sector, competitive pricing could include calculation of environmental risks. Nevertheless, there are already many examples of collaborative work in China, and we will not see real change occur until collaboration is coupled with enforcement.

125. Telephone Interview with Charles Di Leva, Chief Counsel, Environmental and International Law Unit, The World Bank (Dec. 15, 2010).
Many factory managers and workers do not understand how or why compliance with EHS regulations will improve their factory or their lives. Due to lack of enforcement in China, factories do not comply with laws and regulations purely because they fear the consequences they will face if they do not; thus in order to achieve increased EHS compliance, factories must understand how compliance with EHS standards is good for them and good for their communities. The best way to help factories understand is through training and information sharing. This article will discuss three training mechanisms as model examples: The Institute for Sustainable Communities, The Environmental Health and Safety Academy, the Natural Resource Defense Council’s Clean by Design Project, and Business for Social Responsibility.

The Institute for Sustainable Communities (ISC) is an international NGO that works with communities to address “environmental, economic, and social challenges.” While working with industrial facilities, ISC came to the conclusion that a main reason for low levels of compliance with EHS regulations is the lack of sufficient EHS management. ISC consequentially joined forces with several MNCs (including GE, Walmart, and Citi) and Lingnan College at Sun Yet Sen University to seek a solution to the problem. ISC convened a roundtable discussion with their multinational partners in an attempt to discover what the largest barrier is between companies that have proper EHS compliance and those that do not. The main conclusion from the roundtable was that each company needed an “internal champion,” someone in the company to handle EHS management who understands not only the technical requirements of EHS, but also how to manage and why it is sensible to invest in proper EHS compliance. In response to their research, ISC has partnered with many organizations (including USAID, MEP, Guangdong Economic Trade Commission, and Guangdong Environmental Protection Bureau) to assist in the creation and establishment of an affordable EHS Academy in Guangzhou, China.

126. Institute for Sustainable Communities, http://www.iscvt.org/who_we_are/ (last visited Dec. 8, 2010). In China, ISC launched the Guangdong Environmental Partnership program in 2007 and “aims to reduce greenhouse gas emissions, improve public health, and increase environmental accountability” by working with industry, government, communities, and schools. Institute for Sustainable Communities, China, http://www.iscvt.org/where_we_work/china/ (last visited Dec. 8, 2010).
127. Interview with Matthew Degroot, supra note 78.
128. Id.
129. The EHS Academy was launched in 2009 for the purpose of boosting “compliance with the Chinese government’s ambitious environmental, health and safety targets and standards for energy use
The EHS Academy is unique within China because it is able to provide affordable training—unlike most other training programs which are much more expensive. This ability is due in part to funding from corporations such as GE, Walmart, Honeywell, Citi, Sabic, and USAID; and technical support from GE, Adidas, Hewlett-Packard, Business for Social Responsibility, and the World Resources Institute.\(^\text{130}\) The MNCs that participate in the EHS Academy want to make changes in their own factories and within their supply chains, but do not consider themselves experts on the topic and, therefore, have found it is not cost effective to do it themselves.\(^\text{131}\) The Academy is thus an excellent mechanism through which organizations and companies can work together to foster improvement in EHS management throughout China.

The Academy has created a profession within China—Environmental, Health, and Safety Manager. The Chinese government has approved the creation of the profession, and, once the textbooks are completed, the Academy will obtain national certification, hopefully allowing other schools to soon teach the profession as well.\(^\text{132}\) After the Academy accomplishes its goal of creating the profession of EHS Manager, their next goal is to work with the government to create a certification process for managers of Chinese enterprises.

\textit{Id.}
EHS Management Systems within factories.\textsuperscript{133} Wang Xiaohui, Executive Director of the Academy, recognizes that EHS is not as high a priority for the Chinese government as the economy. However, he has high hopes for the future and plans to push the government to move beyond talk to action.\textsuperscript{134}

While in China, I was, fortunately, able to visit the Academy and sit in on a class. The class was engaged, asked lots of questions, and interacted throughout with their professor. It was clear that the professor was imparting to his students knowledge of not only how to comply, but also why it is important to comply in order to protect the environment as well as benefit their respective companies and organizations. After meeting with the Executive Director of the Academy, the Academy’s Marketing Manager, and ISC’s Academy Manager, it was clear that the staff is extremely dedicated to their work and that the Academy has a lot of support from MNCs, government, and international organizations.\textsuperscript{135} Both ISC and the EHS Academy are admirable examples of environmental training in China, which can and should be expanded.

Our second example, the Natural Resources Defense Council (NRDC), has been working in China to train Chinese industries on how to use best practices to ensure compliance with environmental laws and regulations.\textsuperscript{136} NRDC’s Clean by Design project focuses on training Chinese industries on how they can best use environmental practices (such as greening of their buildings) to benefit the facility’s reputation and financial wherewithal.\textsuperscript{137} The project focuses on the textile industry.\textsuperscript{138}

\textsuperscript{133.} Id.
\textsuperscript{134.} Id. In addition to working towards certification for EHS Management Systems, the Academy hopes to work more in the community to help hospitals, schools, and local businesses. Id. The EHS Academy and ISC have received praise for their work in China, and ISC and its partners are now working on replicating the academy in Jiangsu (“an industrial province along the Yangtze River Delta”). Institute for Sustainable Communities, EHS Academy Flier. The Clinton global Initiative, The Clinton Global Initiative, http://www.clintonglobalinitiative.org/ (last visited Dec. 8, 2010), and President Clinton have publically praised ISC’s efforts, and the EHS Academy video was featured at the 2010 Clinton global Initiative annual meeting. Environment, Health and Safety, Institute for Sustainable Communities, http://www.iscvt.org/where_we_work/china/article/ehs_academy.php (last visited Dec. 8, 2010).

\textsuperscript{135.} EHS Academy, supra note 129.

\textsuperscript{136.} The NRDC has 7–8 people on their environmental law team in China who work on assisting the building blocks of China’s environmental law system and broadening the enforcement base for public interest environmental enforcement. Interview with Alvin Lin, Project Attorney, Natural Resources Defense Council, in Bejing, China (Dec. 27, 2010).

\textsuperscript{137.} Id.

The Clean by Design project started when NRDC experts began considering the idea of how MNCs influence China and how China does not have, or does not employ, enough human capacity to enforce environmental laws.\textsuperscript{139} NRDC wanted to identify what makes compliance with environmental laws vary from province to province.\textsuperscript{140} They recognized that rich and powerful companies sometimes have more power than governmental environmental enforcement mechanisms and that a lot of MNCs “talk the talk” but do not necessarily act on their intentions; their public philosophies are aligned with environmental protection, but their implementation is not.\textsuperscript{141} In response, the project team approached some progressive companies, specifically Walmart, to identify why implementation was so difficult.\textsuperscript{142} The team found out several things about the reality of MNC’s influence on their supply chains. One of NRDC’s findings was that MNCs have a lot of leverage over their direct suppliers, but those further down the supply chain are hard to control because MNCs do not have close relationships with suppliers far down the chain. In fact, MNCs often do not know or do not want to know exactly where their products are coming from.\textsuperscript{143}

In response to these findings, NRDC decided to focus their project initially on training suppliers on first steps toward environmental risk management that are good for the bottom line of the factory as well as the environment (conserving water, energy, and materials).\textsuperscript{144} Some of the best practices they identified as most important were communication tools. Each factory they visited had many different certifications of compliance from different MNCs, NGOs, and government entities.\textsuperscript{145} Lin Zixin, Project Manager with the Clean by Design project, explained that it would be greatly beneficial to Chinese industries and regulators if there was more unification of standards.\textsuperscript{146}
Results from the NRDC Clean by Design project so far include a case study, issuance of a document “recommend[ing] 10 practical, easy-to-implement best practices for textile mills that significantly reduce water, energy or chemical use and improve manufacturing efficiency,” and results demonstrating that the ten best practices can help industries and MNCs reduce pollution and save money.\textsuperscript{147} The Clean by Design team is continuing its “initiative to green the global textile supply chain” and they hope that the program can sell as both a cost efficient program as well as a program to save the environment.\textsuperscript{148} Susan Keane, an Environmental Analyst at NRDC, says that MNCs could play a dissemination role in the program and that the program encourages companies to be explicit about the rewards that are provided for those suppliers that implement best practices.\textsuperscript{149} She also, however, recognizes that more needs to be done and that rewards and cost saving are not always enough to make industries understand that they have a problem.\textsuperscript{150} For these reasons, the NRDC team is continuing their efforts to train Chinese facilities and look for solutions to greening the textile supply chain.

Our final example of valuable training in China is the Business for Social Responsibility (BSR). BSR is a nonprofit organization that “works with its global network of more than 250 member companies to develop sustainable business strategies and solutions through consulting, research, and cross-sector collaboration.”\textsuperscript{151} BSR works with companies, governments, other NGOs, and international organizations on an array of projects focused on encouraging sustainable business practices.\textsuperscript{152} The organization facilitates cross-sector collaboration based on topic, playing a unique position in regards to the government because their members work through them as “one voice.”\textsuperscript{153}

\textsuperscript{147} Natural Resources Defense Council, supra note 138.
\textsuperscript{148} Interview with Susan Keane, supra note 118.
\textsuperscript{149} Id.
\textsuperscript{150} Id.
\textsuperscript{151} The Business of a Better World, BUSINESS FOR SOCIAL RESPONSIBILITY, http://www.bsr.org/ (last visited Dec. 4, 2011). The organization began six years ago and now has over 100 employees, six offices on three continents, and works in more than 70 countries. Interview with Wei dong Zhou, Country Director, Business for Social Responsibility, in Guangzhou, China (Dec. 31, 2010).
\textsuperscript{152} Interview with Wei dong Zhou, supra note 151.
\textsuperscript{153} Id. There is no bar to membership, but there are annual fees that vary based on the size of the member company and annual gross revenue. Id.; Membership, BUSINESS FOR SOCIAL RESPONSIBILITY http://www.bsr.org/files/membership/BSR_Membership_2011.pdf (last visited Dec. 4, 2011). Some of the functions and programs BSR facilitates include: consulting, working with businesses to develop sustainable strategies and solutions; the BSR Energy Efficiency Program; the Electronic Industry Citizenship Coalition (EICC) program, an industrial citizenship collaboration including 30
In addition to numerous cross-sector collaborative training projects, BSR holds an annual conference on corporate responsibility that attracts from 1200 to 1400 people each year.154 The conference includes public training, plenary sessions, and breakout sessions. Last year, over 50 countries were represented at the meeting, with about 70% from MNCs and 30% from NGOs, academia, and government.155

These are just three of the best examples of EHS training that is occurring in China. The programs are certainly making a difference, but, with the enormous population in China, the effect is minimal. Training must be expanded throughout China in order to educate factory managers and workers on why compliance with EHS laws and regulations is important as well as how it is beneficial to their factory and communities. This expansion should be a collaborative effort, and the Chinese government should subsidize training programs and encourage participation.

CONCLUSION

The Chinese government must make EHS a priority and allocate the resources necessary to properly enforce EHS laws and regulations. Due to China’s enormous population, however, it is equally important to capitalize on the work of corporations, MNCs and Chinese corporations, international organizations, and NGOs in order to promote and ensure EHS compliance. MNCs and Chinese corporations can and should be employed as authoritative resources for enforcing EHS standards within Chinese industries. It is essential that the Chinese government utilize all of its resources in order to improve environmental quality and to prevent further industrial environmental degradation.

Experts agree that internal EHS management systems are critical to successful regulatory compliance within industrial facilities. Through the GCP, the Chinese government has made these systems mandatory for financial institutions. The government should make EHS management systems mandatory for industrial facilities as well. In order to enforce the implementation of management systems, the government should employ and encourage corporations to oversee implementation within their supply

MNCs; the BSR Training Institute; and research on electronic supply networks and water pollution in China. Interview with Wei dong Zhou, supra note 151; more information can be found at http://www.bsr.org/en/.

155. Interview with Wei dong Zhou, supra note 151.
chains. Because corporations have an increasingly large presence in China and the Chinese government needs and wants to encourage corporations to do business in China, it is likely that corporate presence will increase in the years to come. For this reason, it is of the utmost importance that the Chinese government use corporations as partners for environmental protection to ensure that, while economic goals are met, EHS standards are met and improved upon as well.