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*595 THE PERILOUS HUNT FOR APEC BLUE: THE DIFFICULTIES OF IMPLEMENTING EFFECTIVE ENVIRONMENTAL REGULATIONS IN CHINA

***596** During the 2014 Asia Pacific Economic Conference (APEC) meeting, Beijing's notorious pollution had settled and the city was gifted with uncharacteristically clear, blue skies.[1] So blue were the skies that the people of Beijing now use the term "APEC blue" to describe any abnormally pristine day.[2] However, these clear skies were not the result of mere chance, but were instead obtained through the careful planning of the Chinese Communist Party (CCP).[3] In order to reduce the pollution during the event, the CCP established a six-day holiday for all governmental and quasi-governmental offices and implemented an even-odd license plate system designed to cut traffic congestion by 35%.[4] Nonetheless, these measures could not last forever, and by the end of the conference, the city's infamous smog began to return.[5]

As the sky became hazier, Chinese President Xi Jinping and U.S. President Barack Obama met in the Great Hall of the People to announce that the two had concluded an agreement on the need to combat the effects of climate change.[6] Here, President Xi announced for the first time that China will stop emissions growth by 2030, signaling to the world that China was serious about improving its environment.[7]

Chinese policies under President Xi further show that his declaration that day was not an accident or mere empty words. For example, in 2013 China implemented a carbon tax,[8] and in 2014, revised its Environmental Protection Law.[9] This revision increased fines for polluters, gave regulators more enforcement powers, and increased transparency.[10] China also released the "Integrated Reform Plan for Promoting ***597** Ecological Progress" in 2015.[11] This plan formally expresses China's intention to phase out subsidies for fossil fuels, protect natural resources, and establish a nationwide carbon trading system.[12]

However, no matter how serious the Chinese government is about improving its environment and how well intentioned its policies are, real barriers stand in the way of the implementation of meaningful reform. This paper attempts to show that regardless of Beijing's goals, China will need major legal and economic reforms if any effective environmental policies are to be put into place. Section one will explore the history of environmental regulation in modern China and will detail recent legislative efforts. Section two will examine the difficulties of implementation, including problems with China's institutional capacity, the reliability of data, and the inadequacies of the Chinese regulatory structure in general. Section three will discuss the government's encouragement of public involvement in environmental enforcement and section four will describe the economic difficulties of widespread reform.

China's political and regulatory system is unique and complicated. This paper is but a mere snapshot of the institutional and legal difficulties any effective environmental reform effort will face. A truly complete accounting of China's serious economic, political and legal challenges can only be done in book form and not in this short journal piece. It should also be noted that this paper is not meant to be a critique of China's current government, nor is it meant to imply that its leaders are disingenuous. Instead, this paper is meant to highlight the complexity of the Chinese system and will hopefully serve as a

guide to those wishing to do business in China or conduct further research on its institutions and regulatory systems.

Section I - Background and Recent Developments

Regulatory Structure

The Chinese political system contains numerous institutions with unclear roles. Officially, the institution charged with the creation of all laws in China is the National People's Congress.[13] According to the Constitution, it is the "highest organ of state power"[14] and is responsible for electing the "President and Vice President, the President of the Supreme People's Court ... the members of its own Standing ***598** Committee," the Premier, and the Vice Premiers.[15] It also has the power to remove members of government from their positions.[16] The National People's Congress, however, has 3,000 delegates and only meets once per year.[17] This means that most laws are made by its Standing Committee, a group of roughly 175-185 members that meets once every two months.[18]

China also has a State Council made up of, among others, the Premier, Vice Premiers and the ministers of the different departments.[19] The State Council meets monthly and is tasked with the "day-to-day functions of the government."[20] It is technically inferior to the National People's Congress, but in reality the Congress has no control over its activities.[21]

Officially, the President of China is merely a ceremonial position, but in recent practice that has not been the case.[22] In reality it is the General Secretary of the Communist Party that wields the most authority, but President Xi Jinping and both of his predecessors, Hu Jintao and Jiang Zemin, have served as both President and General Secretary at the same time.[23] Technically the President merely ratifies laws passed by the National People's Congress and does not have any veto powers.[24] In practice, however, the National People's Congress is viewed as a "rubber stamp" congress[25] and it is the President or General Secretary who has the real power.[26]

The government as described in the Constitution does not appear to be the government that actually controls the country. For example, the Communist Party is not granted any authority in the Constitution and is only mentioned once.[27] Nonetheless, it has de facto control of all aspects of modern government.[28] The Party is headed by the General Secretary (Xi Jinping), who acts as the head of the Standing Committee of the Politburo, the organization of Party elders that effectively oversees all aspects of Chinese government.[29]

***599** Nonetheless, while real power rests with the Communist Party and not with the National People's Congress, it is still the Congress or its Standing Committees that must make and pass the laws.[30] The National People's Congress has the sole authority to "enact 'basic law' concerning criminal offenses, civil affairs, the state organs and other matters."[31] As alluded to earlier, no laws stand a reasonable chance of passage without the support of the Party, but they must still formally go through the legislative process.

Environmental laws can be passed by the National People's Congress or its Standing Committee.[32] Additionally, regulations can be implemented by the State Council and the Ministry of Environmental Protection, but they carry less legal weight than official laws passed by the National People's Congress or its Standing Committee.[33] The Ministry of Environmental Protection is the top environmental regulator in the country,[34] but most regulatory work (i.e. enforcement and monitoring) is done at the provincial and local levels through environmental protection bureaus that are attached to, appointed by, and funded by the local governments.[35]

Lastly, the court system in China is very different than those in the West. In China there is a hierarchy of courts with the Supreme People's Court at the top, the "Higher People's Court at the provincial level, the Intermediate People's Court at the prefecture level and the Basic People's Court at the county level."[36] Judges at the national, provincial, and local levels are appointed by the corresponding people's congress, but can be fired much easier than federal judges in the United States.[37] Additionally, Chinese judges lack the power of judicial review, but can have their decisions reviewed by the local or national people's congresses.[38]

Overview of Chinese Environmental Issues

At present, China is the world's largest emitter of greenhouse gases and accounts for 28% of the world's total CO_2 emissions.[39] It is also the world's largest ***600** consumer of energy, with 70% of that energy currently supplied by coal.[40] Such emissions not only have a large impact on global climate change, but also the health of the country's 1.3 billion people.[41] In a study conducted by Robert Rohde and Richard Muller, the two found that over a four-month period, 92% of the Chinese population was exposed to more than "120 hours of unhealthy air" and that "38% experienced average concentrations that were unhealthy."[42] They further concluded that Chinese "air pollution is calculated to contribute to 1.6 million deaths" per year, or "roughly 17% of all deaths in China."[43]

Air pollution in China is a serious public health concern and, despite government attempts to curb it, the problem still lingers. In fact, on December 7, 2015, while President Xi was in Paris attending the United Nations Framework on Climate Change COP-21 conference, Beijing officials announced that the city was entering its first ever "red alert."[44] The "red alert," part of a pollution categorization regime established in 2013, is initiated whenever particulate matter (PM 2.5, a particularly hazardous form of air pollution) reaches dangerously high levels.[45] This announcement forced the city to close some of its factories, close schools, and reinstate its even-odd license plate system.[46] While schoolchildren had their first ever "smog day," the air cleared and, after three days, the city went back to normal.[47] However, just twelve days later, the city was forced to declare another "red alert," highlighting just how bad the city's air continues to be.[48]

China suffers not only from unhealthy air, but also dangerously polluted water. China has the lowest per capita fresh water availability in the world.[49] In 2007, the World Bank concluded that "300 to 500 million of China's rural populace lack safe drinking water; and diarrheal diseases and digestive system cancers due to polluted ***601** drinking water cost 1.9 percent of rural GDP each year."[50] Furthermore, industrial firms discharge "concentrated, highly toxic industrial pollutants [that] overburden the self-cleaning capacities of rivers and exacerbate the deterioration of water quality."[51]

China also has a problem with its soil. In 2014, the Ministry of Environmental Protection released data from a massive soil survey that included samples taken from 6.3 million square kilometers of land.[52] In this survey, it was revealed that "as much as 16 percent of China's soil contains higher-than permitted levels of pollution."[53] The survey also showed that "82.8 percent of the contaminated samples contained toxic inorganic pollutants."[54]

The Development of Environmental Regulations

In 1978, two years after the death of Chairman Mao Zedong, Deng Xiaoping became the de facto leader of China. Though he never formally became Chairman of the Chinese Communist Party or the nation's president, Deng served as the nation's paramount leader for over a decade and instituted the reforms that made China the nation it is today. Among those reforms were attempts to revive the role of law in society and implement an environmental regulatory regime.[55]

That year, China made its first mention of environmental protection by amending the Constitution to include a provision mentioning that "the state protects and improves the environment in which people live and the ecological environment."[56] While small, this provision was an important first step that formally recognized the national government's role in protecting the environment. This led to the adoption of the 1979 Environmental Protection Law. Initially implemented on a trial basis and not fully applied nationwide until 1989, this new law established fines for polluters and established a system in which local entities were responsible for meeting certain pollution-related goals.[57] Since then, the Chinese government has also enacted several other environmental laws, including laws designed to protect wildlife, water resources, grasslands, forests, and fisheries.[58]

***602** One of the most important reforms has been the Environmental Impact Assessment Law, which came into effect in 2003.[59] This law requires new construction projects to undergo an investigation from a local environmental regulator to determine whether or not the project will have a harmful effect on the environment.[60] If a project is deemed to be too harmful to the environment, then a construction permit either will not be issued or will be revoked.[61]

Despite these laws, China's pollution levels continued to rise and the public became more and more angry, causing many protests nationwide.[62] Fearing that the deteriorating environment was causing instability at home and facing increasing diplomatic pressure abroad, in 2014 the government took action and amended the Environmental Protection Law to state for the first time that environmental protection was a "basic state policy."[63]

The 2014 revisions also further defined the roles of the government, the general public, and the nongovernmental organizations.[64] For example, the law states that it is the government's responsibility to monitor environmental quality, provide environmental services, disclose pollution information, and enforce the law.[65] The revision also emphasizes governance over government.[66] What this means is that the public and NGOs are expected to participate in the process. Specifically, they are expected to report violations to their local environmental protection bureaus and comment on the legislative process.[67] NGOs are also allowed to bring public interest suits where there is "ecological disruption that injures society's interests."[68] However, the plaintiffs must be registered with the civil affairs bureau and must have been engaged in environmental protection activities for more than five years.[69]

Notably, the 2014 revisions also change the manner in which fines may be levied.[70] Previously, polluters who received a fine from a regulatory agency would ***603** often receive fines that were too small to act as deterrents.[71] Now, however, regulators have the power to impose a fine on a daily basis until the polluter is compliant.[72] This greatly raises the cost of doing business for the polluter and has a greater deterrent effect.

In order to obtain more regulatory flexibility, the revised Environmental Protection Law contains provisions allowing the government to establish environmental "redlines" in areas that are deemed sensitive.[73] What this means is that once such an area is established, no further development or exploitation can occur there.[74]

Furthermore, in 2015 the Communist Party's Central Committee and the State Council published the "Integrated Reform Plan for Promoting Ecological Progress."[75] In this plan, the government announced its intention to promote more environmentally friendly industries and its intention to phase out subsidies for fossil fuels.[76] In order to do so, the plan states that the government will issue lists of "energy-saving, low carbon" technologies "at regular intervals."[77] The government also announced that it will encourage financial institutions to "step up grants of green loans" and will explore the creation of green investment products and the issuance of "green bonds."[78] Additionally, the government will establish a nationwide cap-and-trade system.[79] This system will be similar to a test cap-and-trade system established earlier at the regional level.[80]

Recently, the Chinese government has also made a significant effort to reduce its reliance on coal by increasing its investment in renewable energies.[81] Currently, China has the "world's largest renewable energy system, generating over 1 trillion kWh (in 2013) from water, wind and sun."[82] This increase in renewable energy has also been ***604** coupled with a large decrease in the use of coal. In February 2016, the Chinese government announced that planned cutbacks in the coal industry could cause as many as 1.3 million coal workers to lose their jobs.[83]

China is also a party to the United Nations Framework Convention on Climate Change and in 2015 President Xi Jinping attended the COP-21 conference in Paris.[84] Prior to the conference China submitted its "intended nationally determined contribution," entitled "Enhanced Actions on Climate Change."[85] In this, China reiterated both its commitment to reach peak carbon dioxide emissions by 2030 and its desire to invest in energy-efficient technologies.[86] China also announced that by 2030 it intends to have lowered "carbon dioxide emissions per unit of GDP by 60% to 65% from the 2005 level," increased "the share of non-fossil fuels in primary energy consumption to around 20%," and increased "the forest stock volume by around 4.5 billion cubic meters on the 2005 level."[87]

However, if China already had a developed body of law designed to protect the public from environmental hazards, why will these reforms make any difference? Will these reforms help make China's water supply less toxic or lead to greater frequencies of "APEC blue" skies? To answer these questions, it is necessary to explore why previous laws have failed and see whether or not these new reforms will address the structural deficiencies that previously stood in the way. First, it is necessary to provide context and explain the environmental issues China is currently facing.

Part II - Difficulties of Implementation

In the past, the effective implementation of environmental laws has been barred by a myriad of factors. Among them have been the inadequacies of the institutions responsible for regulation and enforcement, the preference of local government to encourage economic growth, and the disparities among the country's different regions. This section will examine the factors in detail to illustrate why laws have been ineffective in the past and why the current reforms are inadequate.

Laws and Regulations are Often Confusing

***605** One of the major issues standing in the way of effective environmental regulation is the confusing nature of the laws themselves. While the Environmental Protection Law is relatively complete and straightforward, many of China's other environmental laws tend to be vague and numerous. Although the State Council has promulgated around forty regulations concerning environmental pollution and the National People's Congress has passed nearly twenty laws, Chinese law also takes "legal-norm-creating-documents" such as penalty procedures, interpretive letters, circulars and decisions into account.[88] One estimate has the number of these documents at over 1,000.[89] Also, local governments have their own laws concerning environmental protection.[90] This, combined with a lack of access to information, makes it difficult for regulators, businesses, advocates and the general public to know what the laws actually are. Attorneys Richard Ferris and Hongjun Zhang state that individuals wishing to understand Chinese environmental regulations "are advised to assume that legal measures to address a particular environmental issues *do* exist - unless the results of extensive research and information received from government entities prove otherwise."[91] Professor McElwee also states that laws have been traditionally left vague so as to give regulators enough latitude to choose the best course of action.[92] There is evidence that this is changing under President Xi,[93] but the problem of regulatory discretion is likely to linger due to China's *guanxi* (relationship) based culture and the familiarity of regulators towards representatives of industry.[94]

Laws and regulations can also be ambiguous. Attorneys Ferris and Zhang describe how one regulation requiring a mercury-content label fails to mention what the label should include.[95] Some laws are drafted without taking into account the actual best practices for environmental protection. Professor Wang Canfa, perhaps the preeminent scholar on Chinese environmental law, notes that during the drafting process of the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste," lawmakers "did not have the necessary basic information detailing both the research on the pollution mechanism of solid wastes and the availability of disposal technology methods for solid wastes."[96] Professor Wang went on to mention that such poor research led to "lax enforcement and compliance of the law."[97] While the enactment of poorly researched legislation is ***606** certainly not unique to China, the ambiguity and inefficient mechanisms present in some legislation certainly poses a problem for both the compliance with those laws and the enforcement of them.

Lack of Institutional Capacity

To begin, it is important to note how new the notion of a regulatory state is to China. Professor Charles McElwee states that "Chinese culture has not traditionally looked to positive law as a model for public behavior."[98] In fact, Professor McElwee notes that in the "Confucian hierarchy of sources of authority for correct behavior, positive law ranked at the bottom."[99]

Furthermore, during the reign of Mao Zedong, the law became largely meaningless.[100] It was not until the reforms of the Deng Xiaoping era that the use of the law and regulatory institutions began to emerge.[101] This means that, at the earliest, the use of state laws and regulations to combat social ills did not gain effective consideration until the late 1970s.[102] Additionally, during the Mao era, universities and higher education in general were viewed as bourgeois and tended to focus on technical education rather than the specialized sciences.[103] Consequently, even when new administrative departments began to be staffed, most staff members lacked the technical knowledge to effectively perform their roles. Professor McElwee points out that "bureaucrats trained in specialized areas such as environmental law and science were not available in sufficient quantities until the late 1990s to staff China's bureaucracies and legal institutions."[104]

Today, the Chinese education system, and especially education in the sciences, is vastly superior to what it was during the Mao era, and in some respects superior to education systems in the West. Therefore, it is unlikely that the lack of scientific expertise that hindered administrative institutions in the past is still a problem. In fact, many officials in "the larger environmental protection bureaus hold master's degrees or doctorates" and employees are required to participate in "regular mandated training courses and skills testing."[105] That being said, as in many other countries, top officials in environmental protection bureaus have occasionally been appointed due to political reasons or a person's *guanxi* (personal relationship) and not because someone is ***607** qualified for the position.[106] While it is safe to assume that such appointments do not entirely affect local environmental protection bureaus, Professor Scott Wilson points out that such appointees are often responsible for setting the direction and tone of the organizations.[107]

Additional concerns remain regarding the number of individuals assigned with the task of monitoring pollution data and

enforcing violations. Presently the vast majority of environmental enforcement in China is done at the local and provincial levels, through local environmental protection bureaus. In 2014 there were a staggering 180,000 employees working for 3,000 local bureaus.[108] This represents a major increase from 1998 when there were only 60,000 employees working for 2,000 local bureaus.[109] However, this large increase in the number of employees does not necessarily mean that there has been a significant number of inspectors or individuals charged with enforcement. Nationwide data concerning the number of such employees is currently unavailable, but according to Li Xiang, an inspector with Beijing's municipal environmental protection bureau, the city is understaffed.[110] Li states that in Beijing, a city of roughly 21.5 million people, there were only 500 inspectors working for the municipal bureau, despite there being around 5,000-6,000 complaints per month.[111] While a significant portion of Beijing's air pollution comes from neighboring Hebei province and Tianjin, the number of inspectors appears to be quite low, especially as China's central government often likes to make the capital city a model for the country.

Funding problems also exist. Local environmental protection bureaus are not funded by the national governments, but are instead funded by the local government in the region they operate.[112] A local government that is more focused on quick economic development could refuse to adequately fund an environmental regulator.

Local Governments Tend to Prefer Economic Growth over Environmental Protection

While the Chinese national government has recently made environmental protection a top national priority, that does not necessarily mean that the provincial and municipal governments charged with enforcing environmental regulations view ***608** the topic in the same manner. Faced with the prospect of either having a strong regulatory structure or quick economic growth, local governments tend to choose local "GDP growth instead of comprehensive, coordinated and sustainable development."[113] After all, businesses are typically attracted to what they see as business-friendly localities, and strong environmental enforcement is likely to raise the cost of doing business.

The national government has recognized this and has attempted to give the local governments the push they need. One way they have tried to incentivize these governments is by changing the promotion system. Previously, the achievements of local governors and mayors were primarily judged by the growth of local GDP.[114] Now environmental performance is also measured.[115] Local officials are expected to meet certain environmental targets and are evaluated by a combination of the locality's ability to meet those targets, economic output, and social stability.[116]

This has the potential to motivate local governments to take environmental regulation more seriously. However, this data is self-reported.[117] When a situation exists where a local official seeking promotion is expected to both improve the economy and improve the environment, it is not difficult to imagine a scenario where that official reports faulty data. In fact, several studies have shown that local governments do indeed report incorrect figures. One study done by Professors Dalia Ghanem and Junjie Zhang showed that when air pollution levels are just over the cutoff point to be considered a "blue sky day" (a day where the air pollution index is below 100), there was evidence of data manipulation.[118] They also state that such manipulation does not necessarily occur on days when the city is closer to the cutoff point and that larger manipulations are possible.[119]

The 2014 Environmental Protection Law revisions attempt to remedy this problem by making agencies charged with the monitoring of pollution jointly liable if they willfully provide untrue information.[120] However, the national government also lacks the capacity to check the accuracy of the data submitted by municipal and provincial governments. In 2014, while there were 3,000 local environmental protection bureaus, there were only 400 employees at the Ministry of Environmental ***609** Protection to review the submitted data.[121] Due to so few employees it seems implausible that such data could be adequately verified.

Local environmental protection bureaus also have an incentive to modify data, as they are both funded and staffed by municipal governments. If a municipal government wished to pay more attention to economic growth, it could staff the local bureau with individuals who will do what the government asks or it could simply reduce the funding allocated to it. Instead of being independent regulators, the bureaus are basically just an arm of the government they are tasked with regulating.

Some regulators appear to be failing to perform their duties with regard to the Environmental Impact Law as well.[122] That law requires a new construction project to be evaluated for its environmental safety, and if the project fails to meet the adequate standards, then either the construction will not be allowed to continue or the municipal government must refuse to issue a

building permit.[123] However, according to the then State Environmental Protection Administration (now the Ministry of Environmental Protection), after 1998 "the number of environmental assessments for construction sites exceeded 90%."[124] If this is truly the case, then why did China's pollution continue to grow? This implies that regulators were either purposefully manipulating data to ensure that a construction project would be approved, or the regulators lacked the requisite knowledge to be able to effectively conduct the inspection.

Lastly, there is evidence that provincial governments tend to encourage lax enforcement in certain areas. In one study of water pollution, the authors found that provincial governments engage in "strategic pollution."[125] The study looked at data from several provinces after the central government issued multiple mandates ordering that pollution be reduced.[126] Instead of taking strides to eliminate this pollution or work to effectively reduce it, the study found that certain provinces instead decided to direct enforcement resources away from the counties that were farthest downstream.[127] The study also found that "both water-polluting and new entry into water-polluting industries [were] significantly higher in the most downstream counties."[128] This allows for less pollution in most of the province's rivers, but does not solve the overall ***610** problem. Instead, all this does is shift the burden of pollution to a neighboring province.

Disparities Between Regions

Contrary to the belief of many Westerners unfamiliar with it, China is not a homogenous country. While the vast majority of its citizens are of the Han ethnic group, China has fifty-five official minority groups within its borders.[129] This speaks to not only the fascinating cultural diversity of the country, but also to the complicated history, geography and development of China as a whole. Most casual Western observers are familiar with the coastal and central provinces near major cities like Beijing, Shanghai, Guangzhou, and Hong Kong. These provinces have been at the center of some of China's most notable historical events and have been crucial to the country's development. They have also become some of the most polluted and are most often the targets of pollution reduction mandates ordered by the central government.

The vast interior provinces, including Xinjiang, Tibet, Gansu, Ningxia, Qinghai, Shaanxi, and Inner Mongolia, have, with exceptions, developed at a much slower pace. For example, the 2010 GDP of the country's two poorest provinces, Tibet and Qinghai, were $7.6 billion and $19.3 billion respectively. On the other hand, the 2010 GDP of the two wealthiest provinces, Guangdong and Jiangsu, were $703 billion and $596 billion respectively.[130] These examples are not outliers. When comparing the GDPs of provinces in the different regions, it becomes clear that the coastal and central provinces are considerably wealthier.[131]

Due to this wealth and development gap, the Chinese central government has applied pollution reduction mandates unevenly. In China's Eleventh Five-Year Plan (2006-2010), the government required some coastal provinces to reduce their chemical oxygen demand (COD) emissions by up to 15.1%, while not requiring some interior provinces to reduce emissions at all.[132] On its face, this makes sense considering that in 2005 COD emissions in Guangdong were 1,058,000 tons while Xinjiang emitted only 271,000 tons.[133]

***611** However, a study conducted out of Nanjing University showed that water-polluting firms were then drawn to the interior provinces.[134] Instead of creating an incentive to force firms to find ways to pollute less, the system simply encouraged them to move elsewhere.[135] The study also mentioned that the water environments in the interior provinces were more fragile and had the potential to cause more damage both financially and to human health.[136]

The current pollution reduction mandate system has largely turned into a game of regulatory "whack a mole." Instead of causing a reduction in water pollution, the effects were potentially more harmful overall. The study also suggested that a 10% across the board reduction mandate could cause a small amount of growth in the number of new polluting firms in the East, but had the potential to reduce pollution growth nationwide.[137] It appears that the goals of China's pollution reduction mandates are harmed by an uneven approach and a more uniform system would be more effective. Nonetheless, such an approach can also be difficult to implement as, due to the large disparity in wealth, an increased reduction mandate in the interior provinces could have a much more economically adverse effect on the provinces that need industry the most.

China's Market-Based Approach

One of the most promising developments in Chinese environmental policy is the 2015 "Integrated Reform Plan for Promoting Ecological Progress."[138] In this plan, the Communist Party and the State Council announced their intention to use market mechanisms to help bring environmental change.[139] One of the mechanisms is a national carbon cap-and-trade system.[140] A cap-and-trade system involves a national or regional "cap" on the total amount of carbon that can be emitted.[141] Entities are then either given carbon allowances or are allowed to purchase them. If an entity uses up its allowances, it can buy more on the exchange.[142] What this means is that if multiple entities are emitting at high levels, then there is more demand and decreased supply on the carbon market, causing the price to increase.[143] If a company cannot ***612** obtain more allowances it is unable to emit more carbon without being subject to penalties.[144]

While this is certainly a welcome reform, its success is not guaranteed. A good example of the limitations of a cap-and-trade system can be found in China itself. In 2013, China began implementing a test cap-and-trade system in several select cities and provinces.[145] According to *The Economist*, the test systems appeared to have been hampered by too liberal carbon allowances.[146] This meant that the price of carbon was too low to have any meaningful impact. In Shanghai, the carbon market even "dried up completely at one point."[147] Additionally, the European Union, another market with a cap-and-trade system, has seen its carbon market collapse in the past.[148]

Another potential problem is China's general lack of transparency and enforcement problems. For a carbon market to work, there needs to be accurate, independently verified emissions data. As elaborated on above, the veracity of data is currently a major issue in China. The *Economist Intelligence Unit* further points out that many state-owned enterprises only report emissions data to their head offices, and for a regional cap-and-trade system to work, those regional offices need access as well.

Lastly, there are questions as to whether officials and market actors will know how the system will work. The *Economist Intelligence Unit* also notes that during the trial system established in the city of Shenzhen, many firms did not "understand how to trade, despite already receiving their allowances," and that some "provincial officials charged with designing [trading] schemes [appeared] to lack fundamental knowledge about carbon trading."[149]

As the full details of the national cap-and-trade system have not yet been announced, it is difficult to say whether or not it will be successful. Nonetheless, the same problems that plague regulators in general (institutional capacity, selective enforcement, etc.) are likely to come into play. If China is able to allocate carbon allowances conservatively and provide safeguards to ensure transparency, then this could be a much-needed step in the right direction.

Other aspects of the reform plan are also encouraging. For example, China's plan to encourage financial institutions to offer green bonds may help spur an even ***613** greater growth in green technology.[150] Its plan to end subsidies to polluting entities is also welcome.[151] Although helpful, it is unlikely that the reform plan will be enough to truly tackle the massive institutional problems that affect China's environmental enforcement.

Part III - Public Interest Litigation

Until the 2014 revisions of the Environmental Protection Law were enacted, it was not possible for a nongovernmental entity to bring an enforcement action against an alleged polluter.[152] While significant barriers still exist for individual citizens to successfully win in court, nongovernmental organizations (NGO) now have greater access to the court system and a better ability to advocate for environmental reform.[153] However, the Chinese judicial system lacks independence from the government and is generally unsophisticated on environmental matters.[154] As a result, the allowance of more public interest suits may not be as useful as some may hope.

The Nanping Case

In the city of Nanping in May 2015, a suit brought by an NGO went to trial for the first time.[155] The case, *Friends of Nature, Fujian Green Home v. Xie Zhijin et al.*, involved defendants who had purchased a mining claim in 1998 and began mining without a permit from the Land and Resources Bureau.[156] The defendants, who began mining between 2008-2011, refused to stop their activities despite "repeated demands from the local Land and Resources Bureau to stop."[157] The defendants were later tried and convicted in criminal court and sentenced to fourteen to eighteen months in prison, but the damage done to the

land had not been corrected.[158] The plaintiffs, two NGOs, then filed suit seeking the lost value of the damaged land, an order requiring the defendants to clean the area, pay travel costs, and pay attorney and witness fees.[159] The primary issues in the case were whether the NGOs had standing, whether the defendants' actions "constituted ecological destruction harming the public interest," and whether the revised Environmental Protection Law applied retroactively.[160] The defendants argued that they had verbal permission from the local authorities, but the ***614** court dismissed their argument and ruled in favor of the plaintiffs.[161] The court rejected the defendants' contention that the mining operation was legal due to their receipt of oral assurances from local officials, as they still did not have the requisite permits.[162] The court also rejected evidence presented by the defendants (meeting notes and an investment policy notice) that they felt helped "legitimize" the mining.[163] This case, known as the Nanping case, has brought hope to the NGO community and according to Professors Yanmei Lin and Jack Tuholske, will lead to NGOs and courts "testing the bounds of China's new public interest litigation laws."[164]

There is no doubt that this case will breathe new life into NGOs around the country and, if applied similarly, will have a positive impact on the environment in general. Nonetheless, there are reasons for skepticism. One of these reasons is the general lack of judicial independence in China.

A Dependent Judiciary

According to Professor Hualing Fu, "judges are CCP members first and judges second."[165] Unlike in the United States, "the Chinese Constitution is hostile to the doctrine of separation of powers and judicial independence has always been taboo."[166] An additional reason for this lack of independence is that judges are appointed by and can be removed by the local, provincial or national congress that put them there.[167] Another is that the judicial bureaucracy tends to encourage judges to be "team players" as opposed to individual decision makers.[168]

The Luoyang Seed Case, a case involving a breach of contract between a foreign and a Chinese company, and not an environmental dispute, is instructive. There, "two different statutes appeared applicable," one national and one provincial.[169] The difference between the statutes centered on the calculation of damages, with the national statute granting a more liberal remedy.[170] As the national statute carries a greater weight than a provincial statute, the panel of judges held that the national statute should apply.[171] However, the ruling had the effect of giving the foreign ***615** company a victory over the domestic company.[172] The judges' decision angered the local Henan People's Congress and its Standing Committee claimed that the judge who wrote the decision "violated the law by engaging in illegal judicial review and by encroaching on [their] authority."[173] The Standing Committee then demanded that both the judge who wrote the opinion and another judge who agreed with it be fired.[174] The court then fired the two.[175] While they were eventually reinstated due to overwhelming public pressure, this case illustrates just how dependent the judiciary is on the Party.[176]

Problems are also quite likely to arise when government officials are involved. Professor Susan Whiting notes that "when local cadres, motivated by financial interests and career interests, become party to land disputes, the role of local courts in resolving such disputes appears to be weakened."[177] Courts may also look to factors outside the scope of the case in question. In one case, a court awarded significantly lower damages because the enterprises being sued were "key" enterprises.[178]

Also, even if a judge is not pressured by government or industry leaders to rule a certain way, most judges do not have the technical knowledge to effectively adjudicate such a case. According to Professor Wang Canfa, "there is a general lack of environmental awareness and relevant experience within the judicial community."[179]

The Nanping case gives reason to hope that NGOs will be able to play an important role in the enforcement of environmental violations. However, due to the general lack of judicial independence and the courts' occasional desire to look at factors outside the scope of the main issues of a case, it is difficult to say what will happen in the future. It is also important to keep in mind that the Nanping case involved two individuals who were already convicted by a criminal court. Ruling against them did not seem to step on any obvious political toes. A more interesting case would be one involving a larger industry or a government official. If the court in such a case were to rule for a plaintiff, then perhaps there may be hope for an important role for NGOs in the enforcement process.

Reforms Fail to Address Lawsuits by Individuals

***616** Despite arguments concerning judicial capacity and potential frivolity, one way for the Chinese government to really let the public play a larger role in the enforcement of environmental regulations is to lower the barriers to filing suit. Traditionally, individuals have always had the right to sue in tort, but plaintiffs in China face an uphill battle.[180] One reason is the cost of litigation. While litigation costs are high in many countries, especially in the United States, plaintiffs in China face fees that may deter a victim of an injury caused by pollution from even filing suit. Professor Alex Wang notes that in China, the loser of a case is required to pay a "case acceptance fee," which can be anywhere from "0.5-4% of the relief requested."[181] This can be an insurmountable barrier to bringing litigation considering that those who live in the most polluted areas are more likely to be poor and unable to even take the risk of having to pay the fine. Nonetheless, even if a plaintiff was willing to take such a risk, that plaintiff could still be subject to other litigation costs, such as appraisal fees. Professor Wang notes that class actions are an option for those with limited funds,[182] but if the Chinese government truly wants to protect the public from pollution hazards, it should lower the cost of bringing a case.

While not making it easier to litigate, it should be noted that both the 2014 Environmental Protection Law revisions and the 2015 "Integrated Reform Plan for Promoting Ecological Progress" seek to encourage citizen participation.[183] This is a positive step and has already encouraged many individuals to play an active role in environmental enforcement.[184] In 2014, after the revisions were made public, 2,080 cases were referred to the police in that year alone, representing a huge increase from previous years.[185]

Part IV - Economic Concerns

Despite China's desire and need for major environmental reforms, recent developments in the global economy may force the nation to scale back its existing regulatory structure, postpone its reform plans, or both. In 2015, China's official growth rate fell to 6.9%, the lowest it has been in twenty-five years.[186] Additionally, imports in January 2016 fell by 18.8% compared to the same month in 2015, and ***617** exports fell by 11.2%.[187] Investors seem to be worried as well, as the Shanghai Stock Exchange Composite Index fell from 3,296 to 2,688 between January 1 and January 31, 2016.[188]

Such economic data seems to imply that now is not the time for China to implement its planned environmental reforms. According to Professor Morris Altman, "there is no reason not to expect that decision makers will avoid becoming greener if such a transformation is a costly process."[189] Of course, increased pollution is not something the Chinese government nor the Chinese populace want, but if such environmental reform has a high economic cost and the country is in the middle of an economic downturn, then effective action is difficult to implement.

After all, it is very unlikely that China's pollution problem can be solved in the near future, but it is possible to quickly establish a more industry-friendly regulatory regime. Many Chinese citizens or the Chinese government might view temporary relaxations of environmental policies to be within the nation's interest if the economy continues to grow at a slower pace.

Conclusion

This paper is not intended to criticize China, the Chinese people or the Chinese government. In fact, many of the environmental problems China faces today are similar to those faced by the United States, Japan, and the United Kingdom when their economies were still developing. Just a century ago London's pollution would have made the city barely recognizable to the modern eye, and as recently as the 1950s the city of Pittsburgh was so polluted from its steel mills that the city would often have to turn on its streetlights in the middle of the day so that people could see where they were going.[190] Chinese institutions and regulators are not unique in their ability to make more profits by finding ways around regulations. When the United States began enforcing its environmental regulations, many states and industries did what they could to avoid compliance. Additionally, as in China today, original efforts in the United ***618** States to curb air pollution were ineffective and marred by unsatisfactory court decisions.[191]

However, many of the problems China faces are unique to the present day. No country has ever sustained a population as large as China's, nor has a country gone from having most of its citizens largely uneducated and living in poverty to having the world's second largest economy in just thirty years. With such massive growth in such a short period of time, there is little doubt that the emissions required to propel and sustain such large-scale development are at a level that would have been

previously unfathomable. China's political structure is unique as well, with the government feeling a strong need to maintain political stability in such a diverse country with such a large mass of people, while at the same time attempting to address their economic and public health needs.

Over the past thirty years, China has stunned the world and become an economic juggernaut. Nonetheless, if China is serious about truly tackling the very serious environmental issues it faces, then it must institute major structural reforms that attempt to strengthen the institutional capacity of its regulatory bureaus, increase the accountability and transparency of local governments, remove the influence of politics from the judiciary, and clarify its existing laws. Such reforms will be difficult and cannot be done overnight, but if the goal is truly "APEC blue" skies, clean water, and safe soil, then half-measures simply will not suffice.

Footnotes

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