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Chinese Environmental Protection Policies and Implementation

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CHINESE ENVIRONMENTAL PROTECTION POLICIES AND IMPLEMENTATION: AN ANALYSIS

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By

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May 2018

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I dedicate this thesis to my parents, Jennifer Biechele and Sherri Speziale, who have always been there to support me throughout my endeavors and have inspired me to tread in their footsteps of integrity and ambition.

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ABSTRACT

While the majority of people are aware of the pollution hovering atop China's eastern coast and throughout their waterways, they are largely unaware of the policies and implementation efforts of the Chinese government to reign in these threats. Several plans have been enacted by the Chinese government to curb pollution, and these policies have been analyzed herein. The history of environmental protection in China is outlined, followed by the evolution of Chinese environmental law. An analysis of China's major environmental laws is conducted, and the main challenges to effective law are introduced.

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Tawfik, S. M., Shim, J., Biechele-Speziale, D., Sharipov, M., and Lee, Y.-I. (2018) Novel " turn off-on " sensors for highly selective and sensitive detection of spermine based on heparinquenching of fluorescence CdTe quantum dots-coated amphiphilic thiophene copolymers. Sensors and Actuators B: Chemical 257, 734–744.

Western Kentucky University Student Research Conference, Bowling Green, Kentucky, 2016

Shape Memory Alloy Patterning on NiTi Surfaces via Laser-Shock Assisted Direct Imprintng.

North American Thermal Analytical Society, Santa Fe, New Mexico, 2014

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RESEARCH EXPERIENCE AND INTERNSHIPS

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WKU Chemistry Department Research, January 2017 - Present

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Environmental Protection Agency, June 2016 - August 2016

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Studied the Chinese language and culture in an immersive environment for three weeks

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I. Overview of Worldwide Environmental Politics

The first documented notion of environmentalism dates back as early as the 13th century in Arabic medical treatise writings. These reports archive environmental pollution such as water contamination and waste mishandling as a cause of disease.[1] Since then environmentalism has taken many forms; modern environmentalism originated in the late 1800s in Europe during the Industrial Revolution in the shape of conservation groups.[2] As the worldwide population continued to grow at unprecedented rates in the twentieth century, the issue of environmental protection emerged, and environmental laws and agencies materialized globally.[2]

As the world has become more interconnected over the past century so too has the issue of environmental protection. Today global and national environmental protection programs and legislation exist with the United Nations Environmental Program being at the center of international environmental law. It is becoming impossible to separate environmental degradation and pollution on a nation-by-nation basis; pollution caused in one country trickles into others by several means, making environmental protection an eminent global concern. Currently, however, many barriers exist between environmental law and implementation efforts for most countries leading to ineffective protection.

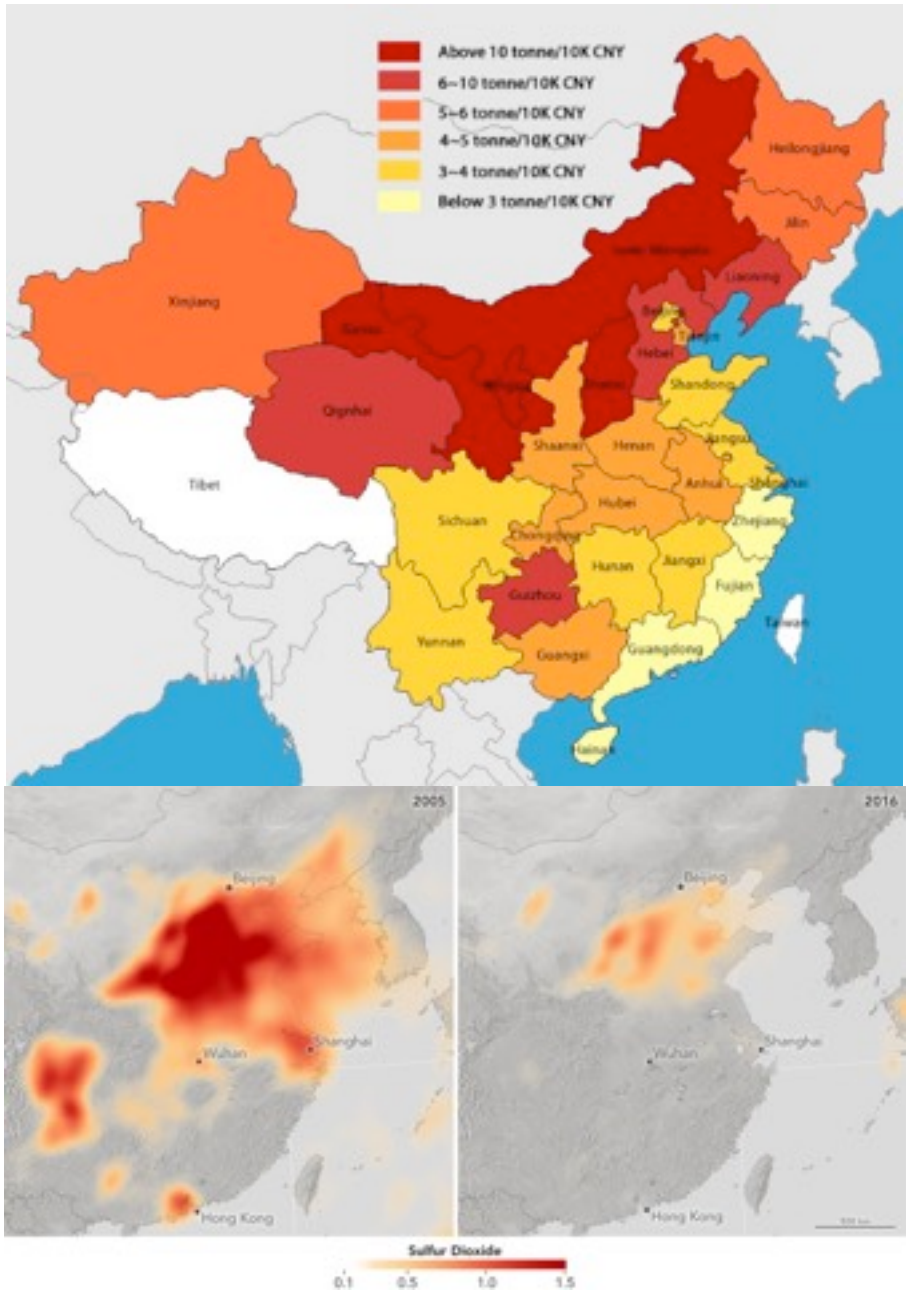
In this thesis, the history of environmental politics and implementation of legislation in the highest polluting country in the world -- China -- is examined in further detail to pinpoint the main challenges to environmental protection and provide a framework for more effective environmental policy. The challenges are analyzed in light

of the policies themselves, the governmental institutions at national and local levels and the interests of the people as a nation to identify possible areas of contact for the improvement of environmental policy implementation and outcomes.

II. History of Environmental Politics in China

As the country with the largest population and second largest economy in the world, both records achieved at astonishing rates, China's environmental degradation and pollution was an inevitable side effect.[3] Similar to the other developed nations, including the U.S., Japan and the United Kingdom, China followed the "pollute first, control later," approach to development, in which environmental protection was considered only after considerable economic development was achieved.[4]

This prioritization of economic development over environmental protection did produce unprecedented economic growth for China, rising from 48th in the world in terms of Gross Domestic Product in 1978 to becoming the world's second largest economy in 2010.[5] However, this boom in economic growth was accompanied by environmental devastation. China is currently the world's largest emitter of sulfur dioxide and carbon dioxide, and their anthropogenic mercury emissions remain among the highest in the world.[6-9] Figure 1 illustrates this pollution crisis, showing the intensity of carbon dioxide emissions in each province and the sulfur dioxide emissions near Beijing. While sulfur dioxide emissions have decreased since 2005, China remains the world's leading emitter.



Fig**ure 1:** (top) Spatial distribution average carbon dioxide emissions taken from 1991-2010[7]; (bottom) sulfur dioxide emission levels in 2005 and 2016 in China[9]

Moreover, over 300 million rural Chinese people have no access to drinking water fit for human consumption, and due to an increase in desertification, the Gobi desert is now a mere 150 miles away from Beijing.[10] With the amount of available water in China decreasing yearly, repercussions for the biodiversity, public health, energy security and global relations are inevitable without an effective resolution.[11] Figure 2 shows the regions in China that are most affected by water shortage as well as the increase in water stress in 54% of China's total land from 2001 to 2010. Effective environmental protection is necessary for the further development and sustainability of the world's fastest growing country.

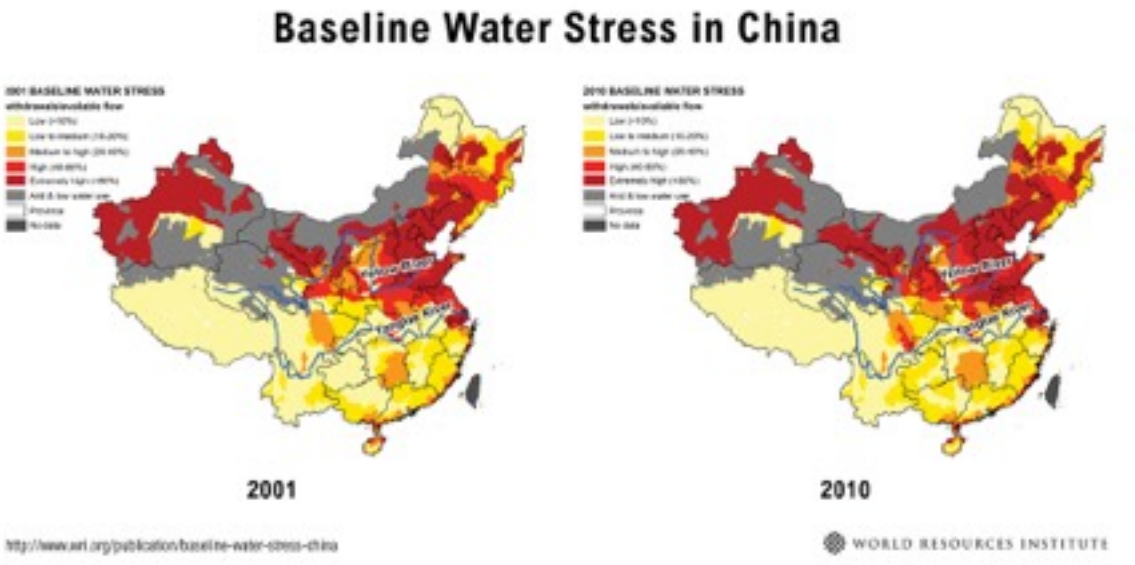


Figure 2: Map of water stressed regions in China from 2001 to 2010, where dark regions suffer from the most water stress and the light regions suffer from the least.[12]

Environmentalism in China began with the passing of the Environmental Protection Law of the People's Republic of China in 1979, which defined the goals of

environmental protection and created a basic framework of environmental standards and assessments. Since the passage of this law, China's environmental law has expanded to include nearly thirty major statutes along with countless State Council regulations and standards.[4] Among the major laws are the Law on the Prevention and Control of Atmospheric Pollution,[13] Environmental Impact Assessment Law,[14] and the Law on the Prevention and Control of Water Pollution,[15] with other laws spanning from forestry and desertification prevention to cleaner energy production.[16-18]

In 2005, the State Council, the leading executive body in China, released the *Decision of the State Council on Implementation of Scientific Development and Strengthening of Environmental Protection* prioritizing environmental protection in order to sustain economic development.[19] However, China is plagued with barriers to implementing environmental protection policies, and, as the *Decision* noted, "the environmental protection legal system is not complete...and where laws exist they are not followed and enforcement is not strict."[19] These barriers to law enforcement are often times due to conflicts with economic interests and are discussed further in subsequent chapters.

III. Five Main Stages of Environmental Protection in China

To understand the context in which the development of Chinese environmental policies materialized, an introduction of the five main stages of environmental protection throughout China's history are outlined as reported by Wang.[20]

A. Towards Sustainable Development Strategies: **1983 - Present**

China's State Council announced environmental protection as one of two basic state policies in 1983, which indicated that China would prioritize environmental protection as a guiding principle to secure long-term stability and major strategic interests.[21] According to Li Yanping, a basic national policy is one that is essential to all other governmental policies and applicable to all aspects of society.[21] Following this announcement, in 1994, the Chinese government issued "China's Agenda 21 -- White Paper on China's Population, Environment and Development in the 21st Century."[22] China's Agenda 21 included the implementation of projects spanning nine priority areas[22]

1. Capacity building for sustainable development
2. Sustainable agriculture
3. Cleaner production and environmental protection industry
4. Clean energy and transportation

5. Conservation and sustainable utilization of natural resources
6. Environmental pollution control
7. Poverty alleviation and regional development
8. Population, health and human settlements
9. Global climate change and biodiversity conservation

In 1996, sustainable development was incorporated into national strategies and its full implementation began.[23]

B. From Pollution Control to Ecological Conservation: 1998 - Present

Outlined in the Environmental Protection Law of 1979, China's initial goals of environmental protection aimed at wastewater treatment, waste gas and factory waste residuals.[20] The focus on pollution control was steady throughout the 1980s and early 1990s, and in the Ninth Five-Year Plan from 1996 to 2000, 0.93% of China's GDP was invested in pollution control.[20]

After the Big Flood of 1998, equal attention started being devoted to ecological conservation, with several programs being developed to curb environmental degradation and conserve biodiversity. The Natural Forest Protection Program (NFPP) was the first response of the Chinese government, and its first phase of implementation spanned from 1998 to 2000 in which immediate action was taken in the upper Yangtze and Yellow River regions to ban deforestation. Currently under the NFPP, more than half of China's

total forestland is under effective protection.

Figure 3. Flood of 1998. Over 3,000 people died, 15 million left homeless and $26 billion dollars lost[24]

China's Sloping Land Conversion Program (SLCP) was introduced in 1999 and aimed to convert sloping cropland into forest land and to afforest barren mountain regions. This program is noteworthy in its implementation, as local economies did not suffer greatly at the expense of the SLCP. Rather, farmers were compensated to plant trees rather than crop and encouraged to engage in environmentally friendly areas of work including livestock breeding.[25] The SLCP was able to reduce the amount of land suffering from soil erosion by over 10 million acres while providing diversity in alternative income-producing agriculture.[26]

C. From End-of-Pipe Treatment to Source Control: Early 1990s - Present

In the early 1990s the Chinese government encouraged the "Three Shifts" strategy of pollution control in which industry pollution shifted to whole process control rather than end-of-pipe treatment, the Law of Promoting Cleaner Production was passed, and World Bank loan pilot programs were taken out across China to help restrict high resource cost in industry.[20] Additional measures to shift the focus from end-of-pipe treatment to source control include the use of high-tech and tertiary industries.[20] These efforts helped to reign in the massive discharge of industrial pollutants despite the gross value of industrial output over doubling in a twelve-year period.[20]

D. From Point Source Treatment to Catchments and Regional Treatments: 1996 - Present

Point source pollution is any single identifiable source of pollution including industrial operation waste and sewer outfalls. The Polluter Pay Policy was created as a means of point source treatment, in which the government aimed to address the concerns of twelve major pollutants. This policy was adopted as a means to economically incentivize companies to comply with environmental standards concerning the pollutants. The government then shifted its focus to the treatment of pollution in key catchments and regions through the Transcentury Green Engineering Program that aimed to reduce the total amount of discharged pollution and replace coal with gas and electricity.[20]

E. From Administrative Management to Legal and Economic Sanctions: Mid 1990s - Present

Since the 1990s, the National People's Congress has strengthened the environmental legislative framework to include thirty major environmental laws that address the major areas of concern including water, air, forestry, wildlife, minerals, soil, coal, and renewable energy, among others.[20] Additionally, between the State Council, the State Environmental Protection Administration (SEPA) and provincial governments, nearly thirty administrative regulations, 427 environmental standards and 900 local laws and regulations have been issued.[20] These laws, regulations and standards, while not entirely effective as we will discuss in subsequent chapters, provide China with a relatively complete legal framework by which to promote a cleaner environment. SEPA and provincial and local environmental protection bureaus currently use many methods to achieve better environmental protection including economic fines and sanctions, public participation and command-and-control approaches.[20]

IV. Main Environmental Protection Laws in China

Environmental law in China has evolved over the years into a relatively complete legal framework for many environmental issues, spanning water and air pollution to forestry and clean energy. A complete list of Chinese environmental laws is shown in Table 1. I will focus my attention on four main environmental laws in China that serve as the skeleton of the environmental legal framework: the Environmental Protection Law, the Law on the Prevention and Control of Atmospheric Pollution, the Law on the Prevention and Control of Water Pollution, and the Environmental Impact Assessment Law. I will begin by discussing the major provisions in each law followed by a summary of the legal framework each law provides.

Note	Name	Went into Effect
1	Environmental Protection Law	1979-09-13
2	Marine Environment Protection Law	1983-03-01
3	Law on Prevention and Control of Water Pollution	1984-11-01
4	Forestry Law	1985-10-01
5	Grassland Law	1985-10-01
6	Fisheries Law	1986-07-01
7	Mineral Resources Law	1986-10-01
8	Land Administration Law	1987-01-01
9	Law on Prevention and Control of Atmospheric Pollution	1988-06-01
10	Water Law	1988-07-01
11	Law on the Protection of Wildlife	1989-03-01
12	Law on urban and Rural Planning	1990-04-01
13	Law on Water and Soil Conservation	1991-06-29
14	Surveying and Mapping Law	1993-07-01
15	Law on prevention and Control of Environmental Pollution by Solid Waste	1996-04-01
16	Electric Power Law	1996-04-01
17	Law on the Coal Industry	1996-12-01
18	Law on Prevention and Control of Environmental Noise Pollution	1997-03-01
19	Flood Control Law	1998-01-01
20	Law on Energy Conservation	1998-01-01
21	Law on Protecting Against and Mitigating Earthquake Disasters	1998-03-03
22	Meteorology Law	2000-01-01
23	Law on Prevention and Control of Desertification	2002-01-01
24	Law on the Administration of the Use of Sea Areas	2002-01-01
25	Law on Promotion of Cleaner Production	2003-01-01
26	Environmental Impact Assessment Law	2003-09-01
27	Law on Prevention and Control of Radioactive Pollution	2003-10-01
28	Renewable Energy Law	2006-01-01
29	Law on Promotion of Circular Economy	2009-01-01
30	Law on the Protection of Offshore Islands	2010-03-01

Table 1: Timeline of environmental laws in China

A. Environmental Protection Law

The Environmental Protection Law of China was first adopted in 1979 and included basic provisions for environmental protection. Revisions were implemented in 1989, but the language used in this newly adopted law remained vague and made implementation efforts nearly impossible against big polluters who had vested economic interests. According to Alex Wang, an Assistant Professor of Law at the University of California, Los Angeles and an expert on comparative environmental law, "China's environmental laws, though broad in coverage, still suffer from weaknesses that limit their effectiveness. Provisions are often vague and more akin to policy statements. They frequently 'encourage' rather than 'require.'"[4]

Perhaps the most consequential of the weak provisions is that dealing with environmental impact assessments (EIAs). Article 13 of the Environmental Protection Law states:

> Units constructing projects that cause pollution to the environment must observe the state provisions concerning environmental protection for such construction projects. The environmental impact statement on a construction project must assess the pollution the project is likely to produce and its impact on the environmental and stipulate the preventive and curative measures; the statement shall, after initial examination by the authorities in charge of the construction project, be

> submitted by specified procedure to the competent department of environmental protection administration for approval. The department of planning shall not ratify the design plan descriptions of the construction project until after the environmental impact statement on the construction project is approved.

While the article specifies that the department of planning is not authorized to ratify the design of the project until the assessment is approved, there are no provisions to discuss the possibility of building without submission of an EIA, and in reality, it is not uncommon for construction projects to be started before EIA approval is issued -- or even filed. The penalty for not submitting an EIA is simply a retrospective "make-up" assessment issued by the Environmental Protection Bureau.[27] Furthermore, fines for noncompliance are not allowed to be issued to developers until the developer ignores the make-up EIA, and the maximum fine is capped at $25,000.[4] Compliance with environmental standards can often exceed $25,000, so developers will often elect to pay the fine rather than build within the EIA requirements.

For the Environmental Protection Law of 1989, far too many of the provisions are worded similarly to the Environmental Impact Assessment provision making compliance and enforcement unnecessary, leading to overall ineffective environmental law. However, Chinese governmental officials admit to being well-aware of these weaknesses in the

Environmental Protection Law and "acknowledge that they are the result of compromises in the legislative process and concerns about limiting economic growth."[4]

In 2015, twenty-five years after the last revisions to the Environmental Protection Law were made, China set forth new amendments to the law to attempt to strengthen its commitment to environmental protection. The revisions took a lengthy four years before adoption by the Standing Committee of the National People's Congress, during which time the revisions were sent to environmental law experts, government bodies, local environmental protection bureaus and even the public for vigorous feedback.[28]

Local governments historically addressed environmental issues as they pleased, and local Environmental Protection Bureaus had their hands tied when implementing environmental standards since the local governments controlled their funding.[28] Without local government compliance, environmental law enforcement in China is unable to effectively enforce national standards.

The revised law provides a better framework for tackling this obstacle of local protectionism by bestowing greater environmental protection responsibilities upon the local governments. The new provisions create environmental performance assessments by which local officials are to be evaluated, marking a big step towards more effective implementation measures. However, without a concurrent raise in incentives for polluter compliance, local officials are likely to face serious repercussions as identified by the new revisions, including demotion, dismissal or criminal prosecution.[28]

Another major milestone laid out in the new Environmental Protection Law is the removal of caps on fines. As mentioned previously, the caps imposed on fines often made it a cheaper option for polluters to pay the fine rather than to comply with environmental standards. The new law attempts to dismantle this mentality and also imposes a daily penalty system for continuous violations. Additionally, the Environmental Protection Bureaus are now granted the power to suspend or shut down operations for companies that fail to meet basic environmental pollution requirements.

Public participation is another area the new revisions aimed to improve. Wang reported of the importance of the potential of public participation in environmental law, saying that public participation, transparency, and public interest litigation "have the greatest potential to improve government accountability because they actually create a possibility for third party, independent monitoring and the increased likelihood of sanction for bad behavior."[4] Significant progress has been made with the new revisions, and the Environmental Protection Law now contains an entire chapter addressing the disclosure of environmental information and public participation.[28] The 1989 Environmental Protection Law contained a very limited scope of public participation in environmental law, saying in Article 6:

> All units and individuals shall have the obligation to protect the environment and shall have the right to report on or file charges against units or individuals that cause pollution or damage to the

environment.

This article fails to address who may qualify as a plaintiff in such litigation against polluting activities, making it nearly impossible for individuals or groups to bring forth lawsuits against polluters.[29] However, the new Environmental Protection Law contains a specific provision to address this issue, saying in Article 58 that Non-Governmental Organizations (NGOs) can file claims in the People's Court "as long as the NGO is (1) registered with the civil affairs department at or above the municipal level and (2) has been engaged specifically in public service activities in environmental protection for five consecutive years without any record of violation of laws."[29] However, this prevents individuals and environmental protection NGOs that are not registered as a social organization to engage in public interest litigation, and the new law's scope is approximated to only enable 300 NGOs to file suit.[30]

Although the new law offers no public interest litigation to individual citizens, it does include a provision set aside for the protection of so-called whistleblowers. Article 57 specifically mentions protections for any citizen or organization that reports "(1) environmental pollution or ecological damage caused by any institution or (2) any failure by an environmental regulatory body to perform its legal duties."[30] Article 57 also requires any reports filed by whistleblowers to be kept confidential.

The new Environmental Protection Law also contains provisions on transparency, requiring corporations to release certain environmental information and for polluters to

provide real-time emissions data.[28] Falsified data is also punishable under the new law. These provisions are yet another feat for China, as transparency in environmental protection is paramount to an effective legal framework.

Overall, the revised law appears much stronger than its predecessor, but its effectiveness will rely largely on its implementation. Many critics have already addressed key concerns with the new law, including still insufficient provisions expanding the amount of public participation in environmental law and environmental standards that remain stagnant despite an increase in environmental protection responsibilities placed on the local government officials.

B. Law on Environmental Impact Assessment

China's Environmental Impact Assessment Law was adopted in 2003 and requires companies to analyze the environmental effects of projects before construction begins. As mentioned before, however, this "requirement" is easily avoidable. Article 31 of the law lays out the legal liability for those construction projects not adhering to these requirements:

> Any construction unit which has not submitted EIA documents of the construction projects for approval in accordance with the Law or has not re-submitted the EIA documents for re-approval or applied for re-examination in accordance with Article 24 of this Law, and arbitrarily start to construct shall be ordered to stop construction and supplement formality within prescribed time by the competent departments of

> environmental protection administration which have the authority to approve the EIA documents of the construction project. If the supplementary formality is not accomplished within the deadline, it may be imposed a fine of between RMB 50,000 and RMB 200,000. The person in charge who is directly responsible for the construction unit and any other persons who are directly responsible shall be subject to administrative sanction.[14]

As seen by the language used in the legal liability article, these environmental impact assessments are often shrugged off by developers due to the maximum cost of the fines associated with noncompliance being cheaper than implementing environmental protection protocols into their project. While the recent revisions to the Environmental Protection Law aimed at closing this loophole by getting rid of caps on fines levied by the local government Environmental Protection Bureaus, the new revisions made to the Environmental Impact Assessment Law could make it easier for projects to begin before approval.

The revised law contains one notable exception: environmental impact assessments no longer need to be approved before other approvals, such as approval for construction, are granted. The push for this revision comes from the economic concern that project applications are stuck in process for too long.

However, many experts and lawyers believe this is a weakening of the law. Engineers Liu and Sun both believe these revisions spell disaster for the environmental

impact assessment system, noting that if developers could get around the requirement for submitting an environmental impact assessment before, it will be much easier now that it is no longer required before construction begins.[27] Additionally, it can be argued that vetoing a construction project that is already underway based on a poor environmental impact assessment will be more difficult than vetoing a project that has not yet broken ground due to the large costs associated with construction.

At the same time, the law now includes harsher penalties for companies that breach environmental law. These penalties, rather than being nearly $25,000 previously, are now anywhere from 1% to 5% of the total project costs, which could prove to be an effective incentive given that this is an amount most developers cannot ignore. It is important to note, however, that it is now much harder to breach environmental law due to the waiving of the submission of environmental impact assessments before construction.

Although the revisions to the Environmental Protection Law seem to strengthen the environmental impact assessment legal framework, the Environmental Impact Assessment Law itself was weakened by officials for what seem to be primarily economic reasons associated with the development of of new projects.

C. Law on the Prevention and Control of Atmospheric Pollution

Issued in 1987, the Law on the Prevention and Control of Atmospheric Pollution focused on eliminating industrial smoke and dust. This can be summarized into four categories:

1. Local governments are responsible for air pollution control within their jurisdiction
2. A concentration on point sources, especially the big industrial coal burning units
3. Measures include standards of emission concentrations at the stacks, pollution fees, guidance of end-of-pipe treatment techniques and the corresponding 3S requirements; and
4. If the law is violated, fines with the maximum capped at 500,000 RMB shall be applied.[31]

This basic legal framework for the protection of the atmosphere, though a step in the right direction, saw little-to-no substantial improvements. Revisions to this law were adopted in 2016, and the law now includes chapters covering supervision and administration of atmospheric pollution prevention and control, atmospheric pollution prevention and control measures, prevention and control of pollution from burning coal and other energy, industrial pollution prevention and control, prevention and control of

pollution from motor-driven vehicles and vessels, prevention and control of dust and agricultural pollution, prevention and control of atmospheric pollution in key areas and response to heavy air pollution weather.[32]

The three major changes included in the amendment are the addressing of the link between air pollution and public health, expanding of the list of pollutants to be controlled, and introducing new air pollution control mechanisms. Perhaps most importantly, for the first time, the new law identifies the ever-growing environmental health concerns of the citizens. Article 1 now states:

> This Law is developed for the purpose of protecting and improving the environment, preventing and controlling atmospheric pollution, safeguarding the health of the general public, enhancing ecological civilization, and promoting the sustainable development of economy and society.[32]

Additionally, the new law includes particulate matter, volatile organic compounds and greenhouse gases as air pollutants to be controlled under one national agency. The amendment also calls for state coordination of the prevention and control of regional pollution.[32] Under the new law, the Ministry of Environmental Protection is responsible for identifying key regions for air pollution prevention and control, and the local governments will then select a governing body to create a plan for the control of air

pollutants based primarily on economic development.[32]

Still, however, the language of the new law enables big polluters to get away with minor penalties. Articles 47 illustrates this point:

> Article 47 Any unit that, in violation of the provisions of Article 11 of this Law, puts a construction project into operation or to use before the facilities for prevention and control of atmospheric pollution have been installed or when the requirements in respect of construction projects as specified in State regulations concerning environmental protection are not met, shall be ordered by the administrative department for environmental protection responsible for the examination and approval of the statement on the environmental impact of the construction project to suspend operation or used and may also be fined not less than 10,000 yuan but not more than 100,000 yuan.[32]

Therefore, failure to meet national air quality standards results only in a submission of a plan to achieve them followed by a fine that is set by the local governments with a cap that could be easily paid by big polluting companies.

Although the new law includes noteworthy provisions for the improvement of air quality and recognizes the link between poor air quality and public health, much

remains unanswered. Most significantly, since the revised law shifts the governance of air quality to local governments, implementation will again be key in determining the success of this new law.

D. Law on the Prevention and Control of Water Pollution

The Law on the Prevention and Control of Water Pollution, adopted in 1984, was enacted to prevent and control water pollution in rivers, lakes, canals, irrigation channels and other surface and ground bodies of water.[33] This law was amended in 2018 and included an expansion of a successful regional pilot program in which the CPC and other government officials are accountable for enhancing water quality, with outcomes directly affecting their personal performance evaluations.[34] The new law also includes provisions for the implementation of sewage and waste water treatment plants in rural areas and increases the penalties for breaking the law. Whereas previously under the law companies who breached law were subject to either warnings or fines, the new law erases the option for warnings. Illegal discharging of pollutants by corporations can now be fined up to $150,000 and could be shut down.[35]

As with the Law on the Prevention and Control of Atmospheric Pollution, the fate of this law, too, depends on the implementation efforts made by the national and local governments. As China battles a serious conflict with economic growth and environmental decline, economic growth has historically prevailed at the expense of the environment.

V. Main Challenges to Environmental Policy in China

The main challenges to environmental policy in China, in my opinion, in order of importance, are: environmental policy taking a back seat to economic development, the decentralization of governance in environmental policy, conflicts of interest, and the failure to acknowledge a citizen's right to an environment fit for life. As we will see, each of these challenges are complex in nature and often intertwine themselves into one or more of the other challenges, making it difficult to fully separate them for analytical purposes.

As a developing country with a large percentage of its population falling in the realms of poverty, China has been hard-pressed for economic growth. However, as a country with the largest population in the world and comparatively few natural resources, the "pollute first, clean up later" strategy that other developed countries including the United States and Japan utilized was destined for failure in China.

The economic growth rate in China was unprecedented, but so, too, was the environmental pollution and degradation that came as a result of such rapid development. Currently in China, provincial and local governments are responsible for their own economic growth, and officials' personal performance assessments are based almost entirely on achieving economic development. Environmental laws have also been decentralized to local governance. The issue with delegating economic growth and environmental protection to the same bodies that are evaluated based on economic

activity lies in the fact that environmental protection has enormous short-term economic costs. As aforementioned, many major developers would rather pay the fine associated with non-compliance because it is often times cheaper than installing environmentally-friendly measures into their construction plans.

Until China prioritizes environmental protection and makes it just as important as economic development, the pollution crisis will likely go untamed. Fundamentally, Wang asserts that environmental protection needs to be raised to "a level of priority previously reserved only for the most important party-state mandates, such as economic growth, social stability, and the one-child policy."[36]

The decentralized nature of environmental law also plays a large role in ineffective law due to the fact that officials in charge of implementing environmental law are also in charge of implementing economic reforms. As previously mentioned, officials who are directly assessed on their economic development success are unlikely to issue harsh measures to big polluting corporations that are good for the economy. An example of the reality of this relationship is that many times if a big polluter with great economic interests is caught in violation of environmental standards, the local officials will issue a fine but then also issue a tax credit for the same amount as the fine, leading to a zero net loss to the company.

This, in effect, leads to further conflicts of interest that arise from the decentralization of the government. The Environment Ministry provides guidelines to local Environmental Protection Bureaus but do not exercise complete authority over

them. Furthermore, local governments, that are typically more invested in economic growth, determine who are staffed and directly fund the local Environmental Protection Bureaus. This leads to an agreement that the Environmental Protection Bureaus will not impose severe penalties on big polluting companies that are good for economic growth, and, in return, the local government cannot not face legal consequences for their lack of diligence.

Finally, the failure of any of the new revisions to the major laws in Chinese environmental law to acknowledge a citizen's right to an environment fit for life is another crucial challenge to effective law. Although the new Environmental Protection Law grants citizens and NGOs the right to obtain information and to participate in governance, they are not allowed to file suit against the government if there exist severe lapses in air and/or water quality. Without a means by which the government can be held accountable for derelict environmental protection, the government is operating essentially on an honors system to properly enforce laws that directly conflict with short-term economic development goals.

VI. Conclusion

The history of China's environmental crisis is one to learn from, as it soared to become the world's largest polluting country in a matter of only a few decades of rapid economic growth. To help combat the harsh environmental affects of this unprecedented growth, China's environmental legal framework has been shaped over time to provide a relatively complete set of legal platforms upon which environmental protection has the potential to thrive. The Environmental Protection Law, Environmental Impact Assessment Law, Law on the Prevention and Control of Atmospheric Pollution and Law on the Prevention and Control of Water Pollution have all been revised within the last five years to contain harsher penalties and a more complete outlook on environmental protection. China still requires much improvement, however, in key areas of enforcement in order to stop the degradation and pollution and reverse its affects to provide its citizens with an environment fit for life.

China is not alone in its struggles for a cleaner environment; many countries around the world have faced similar challenges to environmental protection including the United States. While many of the challenges to environmental policy in America are vastly different than those faced in China, one overarching theme exists amidst both countries' challenges: the competition between economic growth and environmental protection. It remains a challenge worldwide to strike a balance between monetary and environmental profits such that neither succeed at the direct expense of the other.

Nevertheless, this coexistence of the economy and environment is a challenge worth solving as they are both very much dependent on one another. This dependency is already being seen in China; resources such as water and coal are rapidly dwindling away and are projected to greatly impact economic growth in the coming years.

As such, until China begins to treat environmental protection as being on par with economic development, centralizes environmental protection governance, and acknowledges a citizen's basic right to an environment fit for life, the recent amendments to the four main environmental laws will unlikely result in successful, uniform, and sustained environmental protection, and the booming economy that China prides itself on will soon see lasting effects.

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