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KOREAN ENVIRONMENTAL REGULATIONS: READY TO TAKE ON ONE OF THE WORLD'S LARGEST PRIVATE REAL ESTATE DEVELOPMENT PROJECTS?

Joon H. Kim[†]

Abstract: The South Korean government designated three new Free Economic Zones in an effort to become the financial and logistical hub of Northeast Asia. One of these zones, the Incheon Free Economic Zone ("IFEZ"), will encompass 209 square kilometers of completely new development on reclaimed land and is said to be the biggest real estate development project currently in the world. China started using economic zones much earlier in history and although China experienced economic benefits, it also experienced severe environmental degradation in its highly successful special economic zones. Similarly tremendous economic growth will result from the influx of foreign direct investment into IFEZ, which is likely to result in some environmental harm. This Comment argues that with such high levels of concentrated development, the existing South Korean environmental regulatory system will not be able to protect the natural environment within the IFEZ. Although many Korean environmental regulations were modeled after proven Western regulations, the Korean regulatory regime requires improvements. The current Korean environmental regulatory system is inadequate because of poor enforcement, narrow definitions of judicial standing and justiciability for purposes of judicial review, inadequate judicial remedies, and inadequate environmental laws. Comparison with U.S. environmental regulations provides evidence that South Korean environmental regulations lack mechanisms to adequately protect South Korea's natural resources. This comparison also shows some areas of the Korean environmental regulatory system that require change. Without government effort to enhance the effectiveness of existing regulations, South Korea will likely face the grave environmental degradation that China experienced. South Korea should make necessary changes to create a better regulatory system.

I. INTRODUCTION

Korea¹ is building a new master-planned city on reclaimed lands with all new infrastructure, a six-mile bridge, and one of Korea's tallest buildings at 65 stories.² A new convention center, system of canals, world-class golf course, a mix of office, residential, and office buildings, and large civic and

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¹ For purposes of this comment, "Korea" refers to the Republic of Korea, also known as South Korea.

² Keun-Min Bae, *Incheon Opens Doors to N-E Asia & Beyond*, KOREA TIMES, Oct. 26, 2004, at 11, 13.

smaller pocket parks are also part of Korea's plans for this new city.³ This is the Songdo City, a self-sufficient metropolis that will be big enough to support 487,000 people, advancing Korea's plan to increase its international competitiveness.⁴ Songdo City is one of three cities planned as part of the Incheon Free Economic Zone ("IFEZ").⁵ The Korean government designated the IFEZ in an effort to become a regional economic hub in Northeast Asia.⁶

The IFEZ was established in August 2003 by the Act on Designation and Management of the Free Economic Zones ("The FEZ Act").⁷ As the country's first FEZ, the IFEZ is located close to the Incheon International Airport.⁸ Two months after the passage of the FEZ Act, the Korean government added two more FEZs: Pusan/Jinhae and Gwangyang.⁹ Developing Free Economic Zones is one of Korea's "key strategies to prepare for the era of Northeast Asia," a region that is emerging as a global economic powerhouse, with a population four times that of Europe, and a twenty percent share of the world's gross domestic production.¹⁰ As part of a strategy to counter increased competition from other countries in the global economy, Korea launched a program of developing FEZs.¹¹

With such a large scale development at Songdo,¹² the Korean government is also likely to face tremendous environmental challenges. Korea may suffer the same severe environmental degradation that China experienced, which resulted from explosive population growth and economic development in the Chinese special economic zones ("SEZs")

³ See Andrew Salmon, *Breaking Ground on a Korean Bid to Rival Shanghai*, INT'L HERALD TRIBUNE, Nov. 12, 2004.

⁴ See Bae, *supra* note 2, at 11, 13.

⁵ *Id.* at 11.

⁶ *Free Economic Zones to Attract \$5 Billion in 2005*, KOREA TIMES, Mar. 4, 2005.

⁷ Act on Designation and Management of Free Economic Zones, Statutes of the Republic of Korea, vol. 13, ch. 1, art. 1, Act No. 6835 (last amended through Act. No. 7349) [hereinafter The FEZ Act].

⁸ See Florence Lowe-Lee, *Economic Trends*, KOREA INSIGHT, Oct. 2005, at 2, available at <http://www.keia.com/2-Publications/2-1-Insight/Insight-October05.pdf>.

⁹ *Country Commerce South Korea 2004/2005 Main Report*, REGULATORY/MARKET WATCH, July 30, 2004; Lee Hwan-kyun, *Incheon Free Economic Zone to Be Gateway to N-E Asia*, KOREA TIMES, Feb. 22, 2004, available at <http://times.hankooki.com/lpage/special/200402/kt2004022217065811460.htm>.

¹⁰ Jeon-yeon Seo, *FEZs to Create International Cities*, KOREA TIMES, Nov. 19, 2004.

¹¹ *Id.*

¹² Salmon, *supra* note 3. This Comment will examine potential development impacts to the environment only for Songdo City because Songdo City is the first of the three new cities in IFEZ to have begun construction and IFEZ is the first of the three designated FEZs. As of December, 2005, Songdo City is under construction with "Phase I" that includes a Convention Center complex and a mixed-use retail/residential compound. The other cities planned as part of the IFEZ are Yeongjong and Cheongna. Together, the three new cities will become home to almost one million people. Development of Songdo City itself is currently considered the world's biggest private real estate development project.

during the 1980s.¹³ China's SEZs received the greatest proportion of foreign direct investment ("FDI") in China¹⁴ which led to exponential economic growth. Along with the economic growth, however, China's SEZs experienced profound environmental consequences. These SEZs were designated in China's already environmentally distressed regions, which intensified the problem.¹⁵ For example, the rapid growth of industries and population in Shenzhen SEZ led to a significant decline in environmental quality such as decreases in air quality, water quality, and waste concerns.¹⁶ IFEZ's ambitious real estate development plans will similarly face tremendous environmental problems due to the IFEZ's location and size.

This Comment argues that the existing Korean environmental regulatory system is inadequate to protect the fragile ecosystems of the IFEZ from this potentially explosive growth. The Korean environmental regulations were modeled after the Western regulations, and while they are generally considered effective, these regulations, like their Western counterparts, are not perfect.¹⁷ The fragility of the natural environment in Korea's FEZs, combined with Korea's ongoing problems with its environmental regulatory regime will hinder fulfillment of Korea's environmental protection goals and result in great environmental degradation in its FEZs. China's experience is provided as support that Korea will face environmental challenges in its FEZs.

This Comment analyzes the effectiveness of existing Korean environmental regulations as applied to the development of Songdo City. Part II examines China's experience with SEZs and the resulting environmental degradation, and considers the implications for the future of

¹³ See Joseph Profaizer, *Economic Development and Environmental Law in China's Special Economic Zones*, 28 TEX. INT'L L.J. 319 (1993). See generally Benjamin Richardson, *Is East Asia Industrializing Too Quickly? Environmental Regulation in Its Special Economic Zones*, 22 UCLA PAC. BASIN L.J. 150 (2004).

¹⁴ See Richardson, *supra* note 13, at 156. Shenzhen SEZ, which is one of China's first designated SEZs, received approximately \$20 billion of FDI between 1980 and 2000.

¹⁵ See Profaizer, *supra* note 13, at 321.

¹⁶ See generally Jianfa Shen, *Urbanization in Southern China: The Rise of Shenzhen City*, in PROBLEMS OF MEGACITIES: SOCIAL INEQUALITIES, ENVIRONMENTAL RISKS AND URBAN GOVERNANCE (A.G. Aguilar and I. Escamilla eds., 1999), available at <http://ihome.cuhk.edu.hk/~b890706/download/P11y1999.pdf> (noting that rapid urbanization in Shenzhen have contributed to environmental pollution). For additional information regarding environmental degradation in China's SEZs, see discussion *infra* Part II.

¹⁷ See Oliver A. Houck, *Recent Developments in the Clean Water Act, 1998-1999*, A.L.I.-A.B.A. CONTINUING LEGAL EDUC. COURSE OF STUDY, Feb. 10, 1999, at 535 (noting the Clean Water Act as a prime example of a U.S. environmental regulation which has been praised for its effectiveness, but has also had some criticism); William L. Andreen, *Water Quality Today—Has the Clean Water Act Been a Success?*, 55 ALA. L. REV. 537 (2004) (noting that although the U.S. CWA has been very successful, there are some flaws in the regulations).

the environment in Korea's FEZs. Part III asserts that IFEZ is likely to encounter a great deal of environmental challenges. Part IV considers certain problems of the Korean regulatory environment, specifically the Environmental Impact Assessment Act,¹⁸ and provides evidence that Korean environmental regulations, Korea's Water Quality Conservation Act¹⁹ and Coastal Zone Management Act,²⁰ which were modeled after U.S. environmental regulations, have many flaws. Part V examines problems of Korea's environmental regulatory system arising from Korea's effort to increase economic competitiveness. Part VI makes specific recommendations to Korea's environmental regulatory regime that should aid in withstanding environmental pressures of development in the IFEZ. This Comment concludes that Korea should adopt new approaches in dealing with environmental impacts in its FEZs to remedy potential environmental problems that will arise as a consequence of growth in the FEZs.

II. CHINA'S EXPERIENCE SHOWS THAT RAPID GROWTH IN SPECIAL ECONOMIC ZONES WITHOUT ADEQUATE ENVIRONMENTAL REGULATIONS RESULTS IN ENVIRONMENTAL DEGRADATION

China's experience with environmental harm resulting from rapid growth in its SEZs is a warning that Korea may face similar environmental challenges in its FEZs. China's Shenzhen SEZ experienced unpredicted rates of economic and population growth. Although the Chinese government anticipated environmental challenges in its SEZs and responded by creating a regulatory regime aimed at mitigating adverse environmental impact, this regime proved inadequate.²¹ Environmental problems were exacerbated when growth occurred at a much faster rate than the Chinese government expected. China was not prepared to overcome environmental challenges and suffered grave environmental harm as a consequence.

¹⁸ Environmental Impact Assessment Act, June 11, 1993, Law No. 4567.

¹⁹ Water Quality Conservation Act, Amended by Act No. 7249, Oct. 22, 2004 (also available in Statutes of the Republic of Korea, Volume 18, Part 37, Environment (Korean Legislation Research Institute)).

²⁰ Coastal Zone Management Act of 1999, available at <http://www.globaloceans.org/koreanczma.html> (last visited Jan. 21, 2006).

²¹ See Profaizer, *supra* note 13, at 321.

A. *China Faced Environmental Challenges in Its Special Economic Zones Resulting from Unpredicted Rates of Growth*

During the mid-20th century, the Chinese government emphasized political and economic concerns.²² As a result, the country experienced widespread environmental degradation.²³ Although China's environmental awareness grew during the 1970s, economic concerns still dominated policy decisions. Environmental health was not a priority.²⁴ Many heavily polluting foreign industries moved into the SEZs despite the Chinese government's statements that they would only welcome industries using advanced techniques for pollution control.²⁵

China has the most extensive array of SEZs in the world and some of these SEZs suffered great environmental harm.²⁶ China's four original SEZs—Shenzhen, Shantou, Zhuhai, and Xiamen—experienced rapid economic development with severe consequences for the environment. Shenzhen SEZ's population exploded from approximately 94,100 in 1980 to almost one million by 1992, exceeding projections.²⁷ This explosive growth led to numerous landfills, tremendous increases in human and animal waste, deforestation, and soil erosion.²⁸ There were problems with inefficient energy production and high levels of consumption, which led to air quality problems.²⁹ Increased output of untreated wastewater and industrial waste led to a decline in water quality.³⁰ Beyond these basic concerns over air, water, and noise pollution, China's SEZs also contributed to concerns regarding toxic contamination, increases in blood-lead concentrations, the use of genetically-modified crops, and the loss of wetlands.³¹ These

²² Cai Shouqiu & Mark Voigts, *The Development of China's Environmental Diplomacy*, 3 PAC. RIM L. & POL'Y J. S-17, S-18 (1993) (noting that China's past environmental neglect was a result of policies that were more concerned with improving living standards and national wealth than environmental protection).

²³ *Id.* at S-20 (noting that China allowed the development of many factories that took no action toward pollution control).

²⁴ *Id.* at S-23.

²⁵ Profaizer, *supra* note 13, at 324.

²⁶ Richardson, *supra* note 13, at 163; *see also* Shen, *supra* note 16, at 7.

²⁷ Profaizer, *supra* note 13, at 326.

²⁸ *Id.*; Shen, *supra* note 16, at 10. China lost a total of approximately 0.62 million hectares of arable land in 1995 alone.

²⁹ Profaizer, *supra* note 13, at 327.

³⁰ *Id.* at 325; Shen, *supra* note 16, at 12. The amount of wastewater increased from 136.85 million tons in 1990 to over 270 million tons in 1995, partly due from increase in population but as much from increase in wastewater discharge per person.

³¹ Richard J. Ferris & Hongjun Zhang, *Reaching Out to the Rule of Law: China's Continuing Efforts to Develop an Effective Environmental Law Regime*, 11 WM. & MARY BILL OF RTS. J. 569, 573-74 (2003).

environmental concerns and problems demonstrate the incredible strain unpredictable growth had on China's environment.

Chinese SEZs caused not only local, regional and national environmental degradation, but also caused international environmental concerns.³² For example, "yellow dust" from China spread across borders, reaching Korea, Taiwan, and other East Asian countries.³³ This yellow dust triggered acid rain in Korea and Japan.³⁴ Chinese SEZs may also be contributing to climate change, ozone depletion, and acidification of ecosystems.³⁵ China took responsibility for these problems, however, by increasing its efforts to reduce the tension between environmental stress and economic growth.

B. China's Efforts to Improve Its Environmental Regulations Were Unsuccessful

Contrary to the theory that developing countries will often forego environmental protection for economic development, Chinese government leaders worked to reduce adverse environmental impacts of economic growth.³⁶ Despite their efforts in fortifying environmental regulations, actual implementation was less successful.³⁷

China's national policy for environmental protection began in the 1970s and 1980s.³⁸ As environmental awareness increased, the government instituted more effective environmental controls over its SEZs.³⁹ The 1978 Chinese Constitutional provision providing for environmental protection was codified and China's first comprehensive national environmental legislation, the Environmental Protection Law of 1979, was enacted. These two laws served as a basis for environmental regulation in the SEZs.⁴⁰ However, both laws lacked characteristics essential for an effective environmental protection system.⁴¹ First, there was a conflict in economic policy and

³² Christopher Brown et al., *The Pressure of Industry on Chinese Environment: A Tale of Two South China Cities*, at 1, http://www.cwu.edu/~nsfreu/s_papers/ewconnectionsrealfinal3chris.doc (last visited Jan. 22, 2006).

³³ Howard French, *China's Growing Deserts Are Suffocating Korea*, N.Y. TIMES, Apr. 14, 2002.

³⁴ *Id.*; Chung H. Lee, *Toward Economic Cooperation in East Asia* 16-17 (The European Inst. of Japanese Studies, Working Paper No. 100, 2000).

³⁵ Profaizer, *supra* note 13, at 328-29.

³⁶ *See* Profaizer, *supra* note 13, at 329.

³⁷ Richardson, *supra* note 13, at 208.

³⁸ *See* China Information-Environmental Protection, <http://www.asia-planet.net/china/environmental.htm> (last visited Jan. 22, 2006).

³⁹ Shouqiu & Voigts, *supra* note 22, at S-27.

⁴⁰ Profaizer, *supra* note 13, at 333.

⁴¹ *Id.* at 334.

environmental policy. Specifically, China refused to recognize that economic growth had a direct link to environmental problems.⁴² Second, the constitutional and statutory language failed to keep pace with the ever-evolving environmental problems of economic development.⁴³ In addition, government officials often ignored or loosely construed SEZ laws in order to advance rapid development.⁴⁴ Further, the 1979 law had limited enforcement mechanisms.⁴⁵ Lastly, Environmental Impact Assessments were carried out ineffectively.⁴⁶

Around the same time, China's courts were strengthened and as a result, courts increased enforcement of environmental pollution laws and began to hold foreigners liable for their pollution.⁴⁷ In 1984, a Chinese court required a foreign polluter to control its pollution in accordance with Chinese standards and regulations.⁴⁸ The Chinese legislature also strengthened the judiciary's environmental protection ability by fortifying the right of appeals by authorizing formal appeals in the People's Court.⁴⁹ Despite this activism, the judiciary rarely participates in environmental enforcement and government authorities often only employ administrative and civil actions in enforcement.⁵⁰

China also reworked some of the regional environmental authority. The first SEZ laws did not make any mention of environmental controls, and pollution and environmental degradation continued.⁵¹ In 1986, China's State

⁴² Profaizer, *supra* note 13, at 334; see Richardson, *supra* note 13, at 208-9. There is an assumption behind Chinese environmental law that the economy is a command, or planned, one, where production is dominated by state-owned enterprises.

⁴³ Profaizer, *supra* note 13, at 335. Some of the key legislation for the SEZs did not contain any environmental protection measures and lacked specific environmental standards, which made it difficult for local officials to enforce laws.

⁴⁴ *Id.* at 335.

⁴⁵ *Id.* at 333. Enforcement power was limited to criticisms, warnings, and assessment of fines against polluters.

⁴⁶ *Id.* at 336-37. Environmental Impact Assessments were not carried out for smaller projects and for larger projects, it was done ineffectively. For example, The Daya Wan nuclear power plant and the Shajiao coal power plant building permits were approved prior to the completion of Environmental Impact Assessments. *Id.*

⁴⁷ *Id.* at 339-41; see also Shouqiu & Voigts, *supra* note 22, at S-28. In 1984, a Chinese court instituted fines, court costs, and forced a Hong Kong manufacturer to replace its equipment that caused air pollution. *Id.*

⁴⁸ Shouqiu & Voigts, *supra* note 22, at S-28; see also Profaizer, *supra* Note 13, at 340. The appellate court in *Shenzhen Municipal Shekou District Environmental Monitoring Station v. Kaida Enterprises, Ltd.*, held that Kaida must satisfactorily control its pollution in accordance with standards and regulations, and ordered injunctive relief for environmental violations, increasing the enforcement mechanisms available which were previously only government-imposed fines. China's Supreme Court declared this decision as precedent to be followed.

⁴⁹ Profaizer, *supra* note 13, at 340.

⁵⁰ *Id.* at 341.

⁵¹ Shouqiu & Voigts, *supra* note 13, at S-27.

Council passed the Provisional Regulations on Environment Management for Economic Zones Open to Foreigners, which spelled out the duties of foreign companies.⁵² The 1986 regulations contained SEZ zoning laws which provided even greater environmental protection by allowing regional authorities to set higher standards than their national counterparts.⁵³ However, this regulation was not as beneficial to the environment as the government envisioned. The 1986 regulation shifted legal authority to regional and local authorities but this “extensive decentralisation of responsibilities to municipal authorities . . . contributed to variable and inconsistent implementation of environmental regulations in the SEZs.”⁵⁴ Further, the regulation lacked definite measures and offered no definition for key legal environmental mechanisms.⁵⁵ In addition, SEZ managing authorities lacked the environmental expertise necessary to implement effective environmental regulations.⁵⁶ Lastly, China’s “ubiquitous political philosophy . . . [of] grow first, clean up later” also diminished the ability of these managing authorities to enforce the regulations.⁵⁷

The Chinese government anticipated environmental problems in its SEZs and responded by strengthening its regulatory system. However, these efforts had limited success because China’s “seeming successes in environmental policy formation have not been matched by policy implementation.”⁵⁸ China’s environmental regulations were generally strict and detailed, but China did not have the funding or technology to effectively implement these regulations. As a result, actual environmental protection has been a challenge.⁵⁹ China’s experience provides many lessons for the Korean government. Like the Chinese SEZs, Korea’s FEZs are likely to attract great sums of FDI, which has a correlative relationship with environmental degradation. The following section provides a detailed analysis of the consequences of FDI-fueled economic growth.

⁵² *Id.* at S-28; *see also* Profaizer, *supra* note 13, at 341.

⁵³ Profaizer, *supra* note 13, at 342-43.

⁵⁴ Richardson, *supra* note 13, at 212.

⁵⁵ *Id.* at 211. For example, an environmental regulation in Shenzhen SEZ places an obligation to preserve environmental sanitation yet it does not offer a definition of what environmental sanitation is.

⁵⁶ Richardson, *supra* note 13, at 209.

⁵⁷ *Id.* at 153 (internal quotations omitted).

⁵⁸ *Id.*

⁵⁹ Shouqiu & Voigts, *supra* note 22, at S-18-19.

III. SOUTH KOREA IS LIKELY TO ENCOUNTER MANY COMPLEX ENVIRONMENTAL CHALLENGES IN IFEZ AND MUST ASSESS ITS REGULATORY CAPACITY TO ADDRESS THESE THREATS

Korea's FEZs are prime candidates for receiving FDI, which has been shown to be a contributory factor to environmental degradation in host countries.⁶⁰ Because Korea is strategically located within Northeast Asia, an area that receives high levels of FDI, its FEZs are likely to be successful in attracting FDI. The sheer size of Korea's development plans in its FEZs, as demonstrated through Songdo's development plan, will create tremendous environmental challenges. Further, FDI fuels growth in FEZs at unpredictable rates and result in greater environmental harm than anticipated by the government.⁶¹ Without improvements to Korea's environmental regulatory program, ecosystems of the IFEZ are threatened by FDI and accompanying explosive growth.

A. *Northeast Asia Is a Prime Region for Economic Growth and Korea Is Ideally Located to Benefit from SEZs*

Northeast Asia is emerging as the third biggest trading region in the world along with the European Union and the North America Free Trade Association.⁶² The Northeast Asian economy, consisting mainly of China, Japan, Korea, and Taiwan, accounts for approximately twenty percent of the world's Gross Domestic Product.⁶³ Additionally, as a growing region, Northeast Asia is a magnet for foreign investment and attracts more FDI than any other developing country region.⁶⁴ As the region grows, countries are in a race to increase their economic competitiveness.⁶⁵

SEZs are an effective means to increase economic competitiveness. There are many types of SEZs, reflecting "different philosophies, objectives, and means of achieving them."⁶⁶ SEZs vary depending on its adopted

⁶⁰ Nicola Borregaard & Annie Dufey, *Environmental Effects of Foreign Investment Versus Domestic Investment in the Mining Sector in Latin-America*, OECD Global Forum on International Investment—Conference on Foreign Direct Investment and the Environment (2002).

⁶¹ Shen, *supra* note 16, at 13. For example, China's Shenzhen SEZ grew at unpredicted rates and faced many negative environmental effects.

⁶² Kab-Won Oh, Changes in the NE Asian Business Environment and the Policy Direction of the Free Economic Zones, http://www.fe.z.go.kr/dbcon/down.php?file_int=119&code=e03 (last visited Jan. 21, 2006).

⁶³ Hyo-sik Lee, *N-E Asian Economic Hub Within Grasp*, KOREA TIMES, Oct. 26, 2004.

⁶⁴ See Richardson, *supra* note 13, at 156.

⁶⁵ See Oh, *supra* note 62 ("Singapore has its Industry 21 Plan, and Taiwan has its Asia Pacific Regional Operation Center goal. . . . China the touted "factory of the world" which has been growing over 8% a year is not seeking to repeat its success in manufacturing in logistics").

⁶⁶ Richardson, *supra* note 13, at 161.

models, infrastructure subsidies, investment conditions, and special or exempt regulations.⁶⁷ SEZs are designated by host countries with a primary objective of attracting foreign investment to aid their economic growth.⁶⁸ This legislative scheme has been widely used around the world. In 1987, there were about 175 SEZs worldwide but by the late 1990s, the number had more than quadrupled to about 850 such zones.⁶⁹ The increased popularity of SEZs as a way to further economic growth indicates that SEZs have had success in accelerating economic growth.⁷⁰

The Korean government recently passed the FEZ Act, which encapsulates Korea's efforts to become a Northeast Asia economic hub.⁷¹ This Act shows the government's continued commitment to using SEZs as a tool for economic development. The purpose of The Act on Designation and Management of Free Economic Zone is to "facilitate foreign investments, bolster the national competitiveness and seek the balanced development among regions by improving the management environment for foreign-invested enterprises and living conditions for foreigners through the designation and management of free economic zones."⁷² This Act created three FEZs: Incheon, Pusan/Jinhae, and Gwangyang.⁷³ The Korean government expects that these FEZs will attract foreign investment and aid Korea in becoming a Northeast Asia economic hub.⁷⁴

These Korean FEZs are likely to succeed because of Korea's strategic location between China and Japan, and its proximity to the resource-rich Russian Far East.⁷⁵ In addition, this Act provides many incentives including tax incentives, government subsidies (including cash grants), relaxed regulations, enhanced administrative services, and the establishment of foreign schools and medical facilities.⁷⁶ Further, these Korean FEZs will

⁶⁷ *Id.*

⁶⁸ See Bala Ramasamy & Venus T. Viana, *ASEAN's Foreign Direct Investment into the People's Republic of China*, Discussion Paper No. 95.12, Sept. 1995, <http://econ.massey.ac.nz/publications/discuss/dp95-12.pdf> (last visited Jan. 22, 2006).

⁶⁹ Richardson, *supra* note 13, at 160.

⁷⁰ See generally Profaizer, *supra* note 13 (documenting China's experience of tremendous growth in its SEZs); Richardson, *supra* note 14 (noting East Asian countries, like China, has had economic success in its SEZs).

⁷¹ Min-hee Kim, *Revisions Inject New Dimensions in Foreign Economic Zones*, KOREA NOW, Apr. 30, 2005.

⁷² The FEZ Act, *supra* note 7.

⁷³ Lee, *supra* note 63.

⁷⁴ Korean Real Estate Information Center, Applicable Laws: Act on Designation and Operation of Free Economic Zones, <http://www.kreic.com> (last visited Mar. 8, 2006).

⁷⁵ See Lee, *supra* note 63.

⁷⁶ INCHEON FREE ECONOMIC ZONE, *Investment Guide*, http://ifez.go.kr/eng/sub5/a_body.asp (last visited Jan. 21, 2006).

feature “business friendly environments, attractive tourist destinations, and state of the art logistical and industrial facilities.”⁷⁷

Because of its strategic location and FEZ incentives, Korea is likely to attract huge sums of foreign investment in its FEZs, which in turn is likely to fuel uncontrollable rates of economic and population growth. IFEZ has already attracted billions of dollars within Songdo City, including a committed \$12.7 billion investment by the U.S.-based Gale Corporation.⁷⁸ Uncontrollable growth is likely and without proactive environmental management, IFEZ will suffer from environmental harm.

B. Foreign Direct Investment in Special Economic Zones Leads to Environmental Degradation in Host Countries

One of the main purposes of SEZs is to attract FDI,⁷⁹ which often has a profound impact on the environment.⁸⁰ Countries seek FDI despite the danger of negative environmental impacts because FDI has positive effects on the host country’s economic growth.⁸¹ Evidence suggests that an “inverted-U” relationship exists between pollution and economic development, called the “Environmental Kuznets Curve.”⁸² In the beginning stages of economic development, environmental degradation tends to be high, but as the host country’s economy matures, the rate of environmental degradation slows. This change of eventual improvement following initial environmental deterioration reflects a country’s increased demand for environmental protection.⁸³ Eventually, as a host country’s economy develops, environmental regulations are strengthened, and the influx of environmentally protective technology slows pollution. However, studies

⁷⁷ *Id.*

⁷⁸ *Gale Company: American Entrepreneur Investing \$12.7 Billion in New Songdo City*, KOREA IT TIMES, Aug. 2004, available at <http://ittimes.co.kr/en/node.asp?em=M&mcode=200408&subcode=L20&idx=114>.

⁷⁹ See Mark Yaolin Wang & Xiaochen Meng, *Global Local Initiatives in FDI: The Experience of Shenzhen, China*, ASIA PACIFIC VIEWPOINT, Aug. 2004, 181, 183 (Chinese government has attempted to direct FDI to its SEZs).

⁸⁰ ENVIRONMENTAL POLICY COMMITTEE, ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, *Environmental Benefits of Foreign Direct Investment: A Literature Review 7* (2002). Countries seek FDI even though it may have negative environmental impacts because FDI has direct positive effects on the host country’s economic growth. *Id.*

⁸¹ *Id.*

⁸² *Id.* at 11.

⁸³ Gene M. Grossman & Alan B. Krueger, *Economic Growth and the Environment*, 110 Q.J. ECON. 353, 369-70. There is no evidence that would suggest that economic growth unavoidably harms the natural environment, but there is an association of economic growth with deteriorations in environmental conditions in poorer countries. *Id.*

conflict as to the true effects of FDI on the environment.⁸⁴ This is because the environmental effects from activities of foreign investors are hard to separate from the domestic effects and cannot be analyzed independently from other related factors.⁸⁵ Environmental effects from economic development are studied by looking at “scale effects (effects from expansion of economic output), structural effects (effects from changes or reallocation of production and consumption), and technology effects (spill-over effects from technological development and diffusion).”⁸⁶ Scale effects generally tend to be negative, whereas the technological and structural effects tend to be positive.⁸⁷ However, overall environmental quality is measured by “net effects.”⁸⁸ While opinions differ, evidence indicates that the net effects of FDI are “often an accomplice to environmental degradation.”⁸⁹ Altogether, economic growth is associated with deteriorating environmental conditions in poorer countries.

Korea has been described as a newly industrialized country⁹⁰ and is currently known to have high environmental awareness.⁹¹ With its stronger environmental regulations, modeled after regulations in the United States, Korea is poised to avoid the destruction witnessed in China’s SEZs. However, many challenges exist for Korea, particularly the inability to

⁸⁴ ENVIRONMENTAL POLICY COMMITTEE, *supra* note 80, at 10.

⁸⁵ *Id.*

⁸⁶ *Id.* Net effects are the cumulative effect of scale effects, structural effects, and technological effects. Borregard & Dufey, *supra* note 60, at 9. Other studies have also considered FDI effects on the regulatory and policy environment. *Id.* at 17. FDI is expected to put an upward, positive pressure on the host country’s environmental regulations and policies.

⁸⁷ Richardson, *supra* note 13, at 197.

⁸⁸ ENVIRONMENTAL POLICY COMMITTEE, *supra* note 80, at 10-22; *see also* Borregard & Dufey, *supra* note 60, at 8-9. “Scale effects” are measurements of environmental impact resulting from incremental increases in economic activity. As trade and investment expand, the use of natural resources is also expected to increase. Generally, scale effects are expected to be negative. “Technological effects” measure effects from new or better technologies that arrive at a host country as a result of FDI. Technological effects are expected to be generally positive, or at a minimum, neutral, because technologies of advanced countries are often more efficient, pollute less, and consume fewer resources. “Structural effects” refer to changes in patterns of economic activity. They tend to be positive since FDI generally “promote[s] allocative efficiency among economies.” Essentially, this means that “goods will be produced with lower input and capital per unit of output world-wide.” In developing countries there is a recent structural shift toward service and away from resource processing, which is regarded as particularly beneficial from an environmental perspective. *Id.*

⁸⁹ Richardson, *supra* note 13, at 199 (internal quotations omitted).

⁹⁰ George Curran, *Pacific Rim Environmental Regulation: A Western Perspective of Several Countries’ Environmental Liability Laws*, 3 J. INT’L L. & PRAC. 47, 56 (1994).

⁹¹ The World Bank, <http://www.worldbank.org/kr> (last visited January 22, 2006); United Nations Economic and Social Commission for Asia and the Pacific, Virtual Conference, Korea’s vision making process, http://www.unescap.org/dpad/vc/conference/bg_kr_13_kvm.htm (last visited January 22, 2006); *see also* Joon Hyoung Lim & Shui-Yan Tang, *Democratization and Environmental Policy-Making in Korea*, 15 GOVERNANCE 561, 566 (2002) (noting that civic organizations in Korea have been active in cultivating public’s awareness of environmental problems).

effectively implement its environmental regulations. Environmental regulations are only effective if they are well-administered and implemented in a manner adequate to achieve their goals. Effective implementation is hindered when a country is unwilling to control its development in order to lessen its environmental harms.⁹² Many developing countries, like China and Mexico, have neglected environmental protection and instead took steps to stimulate economic development in the past.⁹³ By identifying the flaws in Korea's current environmental regulatory regime, the following section argues that Korea, if it follows China's lead, faces the same potentially negative environmental consequences.

C. *The Proposed Plan of Songdo City Demonstrates that Severe Environmental Stresses Are Likely*

Songdo City is the first city to be developed under IFEZ and is the centerpiece of the IFEZ.⁹⁴ All of the three Korean FEZs are along the coastline. Songdo City will be built on reclaimed lands and will become home to approximately 487,300 people upon completion.⁹⁵ The construction of this new city will occur over approximately ten years and is projected to end in year 2020.⁹⁶ As with any new development, the construction of infrastructure, including systems of roads and utilities, is required. Environmental challenges with Songdo City are greatly multiplied by the fact that development will occur on miles of shoreline within Incheon Bay.⁹⁷ Shorelines are delicate ecosystems, which once disturbed, are hard to restore.⁹⁸ Development brings human, agricultural, and industrial pollutants

⁹² Shouqiu & Voigts, *supra* note 22, at S-17.

⁹³ See L. Ortiz-Lozano et al., *Environmental Evaluation and Development Problems of the Mexico Coastal Zone*, in OCEAN & COASTAL MGMT. 48, 161 (2005); see also Shouqiu & Voigts, *supra* note 22, at S-27.

⁹⁴ See generally Bang Hee-seok & Park Keun-sik, Factors to Be Considered for Improving Free Economic Zone in Korea, <http://faculty.washington.edu/karyiu/confer/xian05/papers/bang.pdf> (last visited Jan. 21, 2006).

⁹⁵ Soh-jung Yoo & Je-hae Do, *Incheon Free Economic Zone Key to Korea's Hub Dream*, KOREA NOW, Aug. 23, 2003, available at http://kn.koreaherald.co.kr/SITE/data/html_dir/2003/08/23/200308230007.asp.

⁹⁶ INCHEON FREE ECONOMIC ZONE, *Directions of Development*, http://ifez.go.kr/eng/sub4/a_body.asp (last visited Jan. 21, 2006).

⁹⁷ See Charles W. Finkl & Steve L. Krupa, *Environmental Impacts of Coastal-Plain Activities on Sandy Beach Systems: Hazards, Perception and Mitigation*, J. COASTAL RES., SI 35, 132 (2003); see also Ortiz-Lozano, *supra* note 94; Dong Oh Cho & Stephen B. Olsen, *The Status and Prospects for Coastal Management in Korea*, 31 COASTAL MGMT. 98, 98-199 (2003). Korea's western coast borders the Yellow Sea, which, although one of the world's most productive fishing grounds, has seen significant decline in recent years.

⁹⁸ A. Chidi Ibe, *The Coastal Zone and Oceanic Problems of Sub-Saharan Africa*, in SUSTAINING THE FUTURE: ECONOMIC, SOCIAL, AND ENVIRONMENTAL CHANGE IN SUB-SAHARAN AFRICA (George Benneh,

which increase over time as an area grows.⁹⁹ Further, Korea's coastlines have been exposed to huge reclamation projects in the past and currently about forty percent of all tidal areas have been destroyed by reclamation.¹⁰⁰ Incheon Bay is already environmentally stressed from the reclamation work for IFEZ and the recent development of the Incheon International Airport.¹⁰¹ Other problems include habitat destruction, decline in water quality, loss of natural resources, loss of aquatic species, and health hazards from waste, etc.¹⁰² Songdo will face tremendous environmental challenges during development, and perpetual environmental pollution is likely to occur.¹⁰³ Additional development of Cheongna and Yeongjong will only amplify those impacts within Incheon Bay.

Consequently, water quality and coastal management are two large issues in development of Korea's FEZs. Korea's Water Quality Conservation Act ("WQCA") and Coastal Zone Management Act ("Korean CZMA") are based on the U.S. Clean Water Act ("CWA") and the Coastal Zone Management Act ("U.S. CZMA"), which are recognized as effective environmental regulations in the United States. However, an assessment of Korea's current environmental regulatory regime and a comparison of Korea's WQCA and CZMA with United States' equivalent CWA and CZMA reveal inadequacies in Korea's laws.

IV. KOREA MUST ASSESS ITS CURRENT ENVIRONMENTAL REGULATORY REGIME AND CONSIDER THE EFFECTIVENESS OF THE U.S. LAWS UPON WHICH IT IS MODELED

Korea's environmental regulatory regime has undergone significant changes and currently has a number of good regulations in place, modeled after U.S. regulations. Both the Basic Environmental Policy Act and the Environmental Impact Assessment Act were patterned after U.S. provisions. Despite this fact, the Korean environmental regulatory system still has some

William B. Morgan & Juha I. Uitto eds., 1996), available at <http://www.unu.edu/unupress/unupbooks/80918e/80918E0p.htm>.

⁹⁹ *Id.*

¹⁰⁰ Chul-Hwan Koh, *The Korean Tidal Flats: Reclamation vs. Conservation*, KOREAN FEDERATION FOR ENVIRONMENTAL MOVEMENT NEWS, Summer 1998, Issue 1.

¹⁰¹ John Kasarda, *Asia's Emerging Airport Cities*, URBAN LAND ASIA, Dec. 2004, available at http://japan.uli.org/pdf/ula_mag_feature_p18.pdf (IFEZ is being developed on reclaimed land); Airport Technology, Incheon International Airport, South Korea, <http://www.airport-technology.com/projects/incheon/> (last visited May 20, 2006) (Incheon International Airport was developed on reclaimed lands).

¹⁰² See Ortiz-Lozano et. al., *supra* note 93.

¹⁰³ Michael Kennish, *Environmental Threats and Environmental Future of Estuaries*, 29 ENVTL. CONSERVATION 78, 78-107 (2002) (Environmental challenges will result from shoreline development and related growth).

areas which require improvement. A comparison between Korea's WQCA and CZMA with the U.S. CWA and U.S. CZMA shows deficiencies in Korean environmental regulatory system.

A. *Korea's Existing Environmental Regulatory System Appears to Be an Effective System but It Lacks Adequate Implementation*

Korea's environmental regulatory regime did not take off until Koreans were faced with severe environmental challenges. After the Korean War, the Korean government was primarily concerned with economic development and less with environmental concerns.¹⁰⁴ Having achieved great economic prosperity since the War, public concerns over their environmental surroundings and how it affected their quality of life increased in Korea.¹⁰⁵ This resulted in a strong political demand for better environmental protection measures¹⁰⁶ and an increased effort to address the country's growing environmental problems.¹⁰⁷ Korea's past environmental laws were generally ineffective.¹⁰⁸

Currently, the backbone of Korean environmental regulation is the Basic Environmental Policy Act ("BEPA"),¹⁰⁹ which closely tracks the United States' National Environmental Policy Act.¹¹⁰ It sets forth "general principles, fundamental policies, and an administrative framework for environmental preservation and remediation."¹¹¹ Under the umbrella of

¹⁰⁴ Richard J. Ferris, Jr., *Aspiration and Reality in Taiwan, Hong Kong, South Korea, and Singapore: An Introduction to the Environmental Regulatory Systems of Asia's Four New Dragons*, 4 DUKE J. COMP. & INT'L L. 125, 159-60 (1993); see also Hong Sik Cho, *Law and Politics in Environmental Protection: A Case Study on Korea*, 2 J. KOREAN L. 103 (2002) (hereinafter Cho, *Law and Politics in Environmental Protection*).

¹⁰⁵ Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 48.

¹⁰⁶ *Id.*

¹⁰⁷ Hong Sik Cho, *An Overview of Korean Environmental Law*, 29 ENVTL. L. 501, 503 (1999) (hereinafter Cho, *An Overview of Korean Environmental Law*). As a first step, the Korean government reworked the existing environmental regulations in place and developed new laws modeled after that of the United States. *Id.* At the same time, the Ministry of Environment ("MOE") was established in place of the Environmental Administration, and had full ministry status. See Ferris, *supra* note 104, at 162-3. Comprised of bureaus that delegate most duties to regional subunits, the MOE is a "network of related entities which implement MOE's policies with difficulty and are frequently hindered by a general lack of cooperation from other ministries. Ferris, *supra* note 104, at 161.

¹⁰⁸ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 505. Korea's first environmental laws, the Pollution Prevention Act and the Environmental Protection Act, were ineffective primarily due to the lack of enforcement. The Pollution Prevention Act was ineffective because it lacked an administrative agency to oversee and enforce its regulations. The Environmental Protection Act, enacted in 1977 and providing for both administrative and criminal sanctions, lacked strict enforcement. *Id.*

¹⁰⁹ Basic Environmental Policy Act of 1990, No. 4257.

¹¹⁰ *Id.* at 505-6.

¹¹¹ *Id.* at 507.

BEPA are national and local environmental regulations which are more specific, targeting environmental areas such as air and water quality, and solid waste.¹¹² BEPA also includes in its definition of “environment,” noise, vibration, and odor, etc.¹¹³ These specific environmental regulations remain in effect as long as they are consistent with BEPA.¹¹⁴ BEPA contains a strict liability standard for polluters and allows national and local governments to establish environmental quality standards.¹¹⁵

Korea’s Environmental Impact Assessments (“EIA”) is one of the major problems with Korea’s environmental regulatory system. The EIA originated from the U.S. National Environmental Policy Act of 1969.¹¹⁶ The Environmental Conservation Act of 1977 established the Environmental Impact Assessment procedure.¹¹⁷ The EIA went through several reforms, and in 1993, it became an independent law as the Environmental Impact Assessment Act.¹¹⁸ The EIA Act has been revised many times in order to make it a more effective regulation but several observations point to the conclusion that the Act has not been as successful.¹¹⁹ In particular, economic development policies have received much attention while environmental protection policies have received less. This had the effect of undermining the Korean environmental regulatory system.

One major problem with the EIA Act is that those preparing the EIA are the people that are undertaking the project; this reduces objectiveness and fairness is not guaranteed.¹²⁰ The second problem lies with scoping and reviewing of the environmental impact statements.¹²¹ Generally, because of other responsibilities, the EIAs are often not reviewed by a committee formed under the EIA Act or a recommended group of experts.¹²² In addition, the EIA consultation process is problematic and has only been

¹¹² *Id.*

¹¹³ Jiwhan So, *Environmental Law of Korea*, INTERNATIONAL COMPARATIVE ENVIRONMENTAL LAW, at KOR-17 (Robinson, Nicholas ed., 2000).

¹¹⁴ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 505.

¹¹⁵ *Id.*

¹¹⁶ So, *supra* note 113, at 19.

¹¹⁷ See Richardson, *supra* note 13, at 189.

¹¹⁸ JAEYONG CHOI ET AL., KOREA ENVIRONMENT INSTITUTE, Comparative Study on the Environmental Impact Assessment Between the Republic of Korea and China—In Case of Golf Courses, at WO-05 (2003); So, *supra* note 113, at 19. Environmental Impact Assessment, prior to becoming enacted as a separate act, was one chapter of the Basic Environmental Policy Act.

¹¹⁹ So, *supra* note 113, at KOR 19-20.

¹²⁰ *Id.* at KOR-19. In the U.S., the Environmental Impact Statements are prepared under the supervision of and in consultation with government agencies.

¹²¹ *Id.*

¹²² *Id.*

implemented at a rate of fifty-seven percent.¹²³ Lastly, the EIA suffers from government's policy placing priority on development rather than the environment.¹²⁴ One example of government's failure with the EIA can be seen through the Shi-Hwa project. The Korean EIA Act requires that the assessment be prepared by the time of public notice. However, the EIA for the Shi-Hwa lake project was prepared nine months *after* public notice.¹²⁵ After spending over two-thirds of a billion dollars on the project, the water quality of the lake deteriorated beyond repair, and the Shi-Hwa lake project was scrapped.¹²⁶

In an effort to address these issues and improve its environmental administrative system, Korea adopted the Administrative Procedures Act ("APA") in 1998. The APA allows private citizens to participate in various government activities, a legislative effort which is the first of its kind in Korea.¹²⁷ By enacting the APA, the Korean government is showing its willingness to increase its environmental responsibility. However, the APA is useless without effective implementation and administration.

B. A Comparison of the Korean Water Quality Conservation Act with the United States' Clean Water Act Reveals Deficiencies in the Korean Act

The United States' Clean Water Act of 1972¹²⁸ is considered to be the United States' most effective and resilient pollution control law.¹²⁹ The CWA has facilitated a great deal of progress in water quality since its enactment.¹³⁰ Rivers and lakes that were once polluted have become recreational spots for picnicking, boating and other waterfront related activities.¹³¹ The CWA has also been successful in reducing the rate of wetland loss and reducing the amount of oil spills into U.S. waters.¹³²

¹²³ *Id.* at 20.

¹²⁴ *Id.*

¹²⁵ Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 54 (emphasis added). The EIA process for the Shiwha project was nothing but a sham and "reveals how backward environment-related law practice has been" in Korea. *Id.*

¹²⁶ *Id.*; see also Manik Hwang, *Coastal Land-Use Change By Reclamation of Tidal-Flats Along the Western Coast of the Capital Region in Korea*, at 6, available at [http://www.cger.nies.go.jp/lugec/Proceedings/12\)Manik%20Hwang.pdf](http://www.cger.nies.go.jp/lugec/Proceedings/12)Manik%20Hwang.pdf). Shi-Hwa, a freshwater lake newly created through a 12.4 kilometer dike, had deteriorated in water quality to a point beyond repair due to uncontrolled inflow of wastewater to a point beyond repair. The dike was broken and the Shiwha lake water was discharged into the ocean. *Id.*

¹²⁷ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 511.

¹²⁸ Clean Water Act of 1977, 33 U.S.C. §§ 1281-97, Pub. L. No. 95-217, 91 Stat. 1566 (2000).

¹²⁹ See Andreen, *supra* note 17, at 537.

¹³⁰ Industry discharges have been reduced and dissolved oxygen levels have increased all over the country. *Id.* at 591.

¹³¹ *Id.* at 591-2.

¹³² *Id.* at 592.

However, the CWA has also been criticized.¹³³ One of the biggest criticisms is that the CWA has not achieved its principal goals: It has not eliminated all discharges into water and has not created fishable and swimmable waters throughout the United States.¹³⁴ The CWA's failure to achieve its goals results from a number of factors. Permit compliance is inconsistent and many industrial facilities fail to meet pretreatment standards.¹³⁵ In addition, the CWA also does not address non-point source pollution¹³⁶ and "[a]s a consequence, non-point source pollution has evolved into the largest single obstacle to improving water quality."¹³⁷ Another large problem with water quality is one of hydrologic modification,¹³⁸ which the U.S. Environmental Protection Agency ("EPA") has deemed the second leading source of water quality impairment for United States rivers, lakes, and streams.¹³⁹

The structure of administering the CWA also presents challenges. In the CWA, federal agencies have a dominant role in regulation but state agencies retain rights such as water allocation.¹⁴⁰ This results in legal differences between water quality and water quantity; water quality is now managed by federal agencies under the CWA but water quantity remains an area of law under state control.¹⁴¹ Consequently, the EPA lacks programs or requirements that would effectively integrate water allocation as part of a comprehensive water quality program.¹⁴² Additionally, individual states have not addressed this problem and regulate water quality and quantity through different agencies without much communication or cooperation.¹⁴³

¹³³ Kenneth M. Murchison, *Learning From More than Five-And-A-Half Decades of Federal Water Pollution Control Legislation: Twenty Lessons for the Future*, 32 B.C. ENVTL. AFF. L. REV. 527, 578 (2005).

¹³⁴ *Id.* at 578; see also Reed D. Benson, *Pollution Without Solution: Flow Impairment Problems Under the Clean Water Act Section 303*, 24 STAN. ENVTL. L.J. 199, 265 (2005) (internal quotations omitted) ("The CWA has not achieved its primary objective of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters.").

¹³⁵ Andreen, *supra* note 17, at 537.

¹³⁶ *Id.* at 543.

¹³⁷ Andreen, *supra* note 17, at 593. The CZMA authorizes states to regulate non-point pollution sources but CZMA jurisdiction is limited to coastal waters and do not extend to freshwater bodies. See Paul L. Sorisio, *Poultry, Waste, and Pollution: The Lack of Enforcement of Maryland's Water Quality Improvement Act*, 62 MD. L. REV. 1054, 1061 (2003).

¹³⁸ Hydrologic Modification, http://www.epa.gov/reg3wapd/nps/pdf/va_hydrologicmodification.pdf (last visited Feb. 23, 2006). Hydrologic modification is the modification of stream flow by human activities.

¹³⁹ Benson, *supra* note 134, at 201.

¹⁴⁰ 33 U.S.C. § 1253(a) (2006); see Christine A. Klein, *On Integrity: Some Considerations for Water Law*, 56 ALA. L. REV. 1009, 1018-19 (2005).

¹⁴¹ *Id.*

¹⁴² See Benson, *supra* note 134, at 204-05.

¹⁴³ *Id.*

Overall, while water quality in the United States has improved as a result of the CWA, problems still remain.¹⁴⁴

A close analysis of Korea's WQCA shows that the Korean regulation has problems similar to the CWA. On the surface, the WQCA appears to be a good, effective law. The purpose of the WQCA is to preserve public health and prevention of environmental harm from water pollution.¹⁴⁵ The WQCA specifies permissible discharge standards and requires permits from the Ministry of Environment ("MOE") for the installation of discharge facilities (both wastewater and non-wastewater) and preventive facilities.¹⁴⁶ The WQCA also allows the MOE to assess non-compliance charges, to suspend operations of discharge facilities if inspections indicate that the facility exceeds its allowed discharge totals, and to revoke permits.¹⁴⁷ Chapter IX of the WQCA provides for penal provisions for failure to comply with the Act.¹⁴⁸ The WQCA addresses non-point source discharges but limits its scope only to the usage of agricultural chemicals and specifies that certain agricultural chemicals cannot be used in golf courses.¹⁴⁹ The Enforcement Decree for the WQCA¹⁵⁰ provides for designation, computation of daily discharge, exemptions, inspections and reports, and most importantly, delegates authority to regional subunits with supervision from MOE.¹⁵¹

Although the WQCA appears to be a good water conservation law in general, it still has problems similar to the CWA. It does not adequately address non-point source pollution because its scope is limited to the use of agricultural chemicals in golf courses. In the United States, non-point source discharge has become one of the biggest contributors to water quality

¹⁴⁴ Mark F. Sudol & Richard F. Ambrose, *The US Clean Water Act and Habitat Replacement: Evaluation of Mitigation Sites in Orange County, California, USA*, 30 ENVTL. MGMT. 727-734 (2002). The regulation of wetlands per section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act has had limited success in implementation. Mitigation of wetlands as authorized by the CWA has not had much success since mitigation sites are usually not successful. Lack of successes in mitigation sites result from lack of information and insufficient understanding of wetland functions, and also from inadequate compliance efforts by regulatory agencies. A study using quantitative evaluation in California, U.S.A., found that mitigation sites in a study area resulted in the loss of 126 hectares of wetlands, with only 72 hectares of the mitigation considered successful. The same study using qualitative evaluation showed that only 26 hectares of the mitigation sites were successful after 126 hectares of wetlands were lost to development projects.

¹⁴⁵ So, *supra* note 113, at KOR-22.

¹⁴⁶ WQCA, *supra* note 19, arts. 8-11.

¹⁴⁷ *Id.* arts. 17, 19, 20.

¹⁴⁸ *Id.* ch. IX.

¹⁴⁹ *Id.* arts. 46-2, 47.

¹⁵⁰ Enforcement Decree of the Water Quality Conservation Act, Amended by Presidential Decree No. 18796, Apr. 22, 2005 (hereinafter Enforcement Decree of WQCA). Also found in *The Statutes of Republic of Korea*, Volume 18, Part 37, Environment (Korea Legislation Research Institute).

¹⁵¹ *Id.*

problems. Similar to the CWA, the WQCA does not address water quantity in the regulation of water quality.¹⁵² Inadequate consideration of water quantity in the regulation of water quality has been a problem in both the United States and Korea. Additionally, enforcement and administration of all environmental regulations has been problematic in Korea.¹⁵³

C. *The Korean Coastal Zone Management Act, Which Was Modeled After the United States' Coastal Zone Management Act, Is Inadequate to Protect Korea's FEZs Against Environmental Harm*

The United States' Coastal Zone Management Act aims to protect estuaries and coastal wetlands, provide public access to shores, mitigate negative impacts of coastal development, and accommodate different coastal uses.¹⁵⁴ The U.S. CZMA is a model of good balance in integrating distinct but complementary roles for federal, state, and local governments in achieving coastline protection.¹⁵⁵ This management style is known as "cooperative federalism," whereby states voluntarily assume much of the administrative and enforcement responsibilities.¹⁵⁶ Under the U.S. CZMA,¹⁵⁷ states are responsible for developing a state Coastal Zone Management Plan ("CZMP") according to the guidelines of the U.S. CZMA.¹⁵⁸ The U.S. CZMA also does not provide for a private right of action for a federal agency's failure to meet the consistency requirements.¹⁵⁹ Similarly, the U.S. CZMA does not provide state agencies with a right of action to sue private citizens who act without the approval of a federal permit for activities in coastlines.¹⁶⁰

Implementation of the U.S. CZMA has been problematic as well. Since the CWA does not regulate non-point source pollution, Congress attempted to force states to manage non-point source pollution in 1990 by withholding state funding unless they were in compliance with this new

¹⁵² See WQCA, *supra* note 19.

¹⁵³ For discussion on problems of Korean environmental law, see discussion *supra* Part IV.

¹⁵⁴ See Edward M. Cheston, *An Overview and Analysis of the Consistency Requirement Under the Coastal Zone Management Act*, 10 U. BALT. J. ENVTL. L. 135, 136 (2003) (internal quotations omitted).

¹⁵⁵ Lynne Z. Hale, *Achieving Integration in Coastal Management: The Challenge of Linking National and Local Levels of Government*, http://www.crc.uri.edu/download/HAL_0020.pdf (last visited May 20, 2006).

¹⁵⁶ Cheston, *supra* note 154, at 136 (Congress left some control to the states because coastal management was traditionally an area regulated by state authority).

¹⁵⁷ Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451-65 (2000).

¹⁵⁸ 16 U.S.C. § 1455 (setting forth the guidelines of the Act).

¹⁵⁹ Cheston, *supra* note 154, at 146. Private citizens can, however, bring an action under a different legal theory.

¹⁶⁰ *Id.* at 145.

CZMA provision.¹⁶¹ However, even a decade after the enactment of this provision, only a few states have created and adopted non-point source pollution control measures.¹⁶² The success of this provision in the CZMA is unclear.¹⁶³

Similarly, comparing the Korean Coastal Zone Management Act of 1999 (“Korean CZMA”) with the U.S. CZMA shows that Korean administrative and implementation procedures need to be amended. Korea’s coastal areas face many environmental pressures.¹⁶⁴ There is a high demand for coastal developments, like the IFEZ, although they often lead to the loss of wetlands, declining water quality and declines in fisheries.¹⁶⁵

The Korean CZMA was adopted in 1999 and gave the Ministry of Maritime Affairs and Fisheries (“MOMAF”) jurisdiction over all coastal areas. However, within the “terrestrial zone,” which includes all shorelines extending 500 meters inland from the mean high watermark¹⁶⁶ (one kilometer from where the shoreline has been developed into harbors, ports and industrial complexes), MOMAF does not have a direct regulatory function, but only a coordinating and planning function.¹⁶⁷ The Korean CZMA regulates via a three-tier system involving the National Coastal Zone Management Plan (“CZMP”), regional CZMP, and the Coastal Zone Readjustment Plan.¹⁶⁸ The National CZMP was mandated by legislation to be developed within a year of the enactment of the Korean CZMA.¹⁶⁹ Within the framework of the national CZMP, local and regional governments can voluntarily elect to develop regional CZMPs.¹⁷⁰ If the local or regional governments do not elect to do so or do not have the resources to develop

¹⁶¹ See Sorisio, *supra* note 137, at 1061.

¹⁶² *Id.*

¹⁶³ Andrew Solomon, *Section 6217 of the Coastal Zone Act Reauthorization Amendment of 1990: Is there Any Point?*, 31 ENVTL. L. 151, 183 (2001) (predicting that the US CZMA provision that attempts to force states to regulate non-point source pollution is not likely to succeed because it lacks sufficient incentives or punishments).

¹⁶⁴ See Cho & Olsen, *supra* note 97, at 99. Rapid development of Korea’s coastlines has brought “loss of coastal wetlands and estuaries, degraded water quality and declines in nearshore fisheries.” *Id.*

¹⁶⁵ Dong-Oh Cho, *A Study on Principles and Strategy for ICZM in Korea*, 17 COASTAL MGMT. RES. 65, 65-70.

¹⁶⁶ Coastal and Hydraulics Laboratory, U.S. Army Corps of Engineers, Glossary, <http://chl.wes.army.mil/library/glossary/m.htm> (last visited Jan. 21, 2006). Mean High Water is the average height of the high waters over a 19 year period. *Id.*

¹⁶⁷ See Dong-Oh Cho, *supra* note 165, at 71.

¹⁶⁸ See Cho & Olsen, *supra* note 97, at 112.

¹⁶⁹ Dong-Oh Cho, *supra* note 165, at 72.

¹⁷⁰ *Id.* at 71

their own CZMPs, MOMAF will develop a regional CZMP¹⁷¹ that identifies actions to enhance and restore the coastal areas.¹⁷²

Korea's CZMA is criticized for its centralized approach. The Korean CZMA allocates responsibility among different levels of government but has not been successful in making such allocation effective and efficient.¹⁷³ The approach does not provide for the explicit delegation of power and authority to local and regional governments.¹⁷⁴ Local governments have limited resources and are given minor roles. From their point of view, further coastal development is desirable because that will provide for a larger economic base.¹⁷⁵ Another major shortcoming of the Korean CZMA is the restriction in its jurisdiction.¹⁷⁶ This Korean CZMA is limited to areas below mean high water marks, and the regulations of coastal development on terrestrial areas belong to a different government agency, the Ministry of Construction and Transportation.¹⁷⁷ Another limitation of the Korean CZMA is the CZMPs' questionable authority over other relevant laws or plans which were implemented before the CZMPs came along.¹⁷⁸ There are several regulations which explicitly or indirectly deal with coastal areas but there is a lack of direction regarding which law or plan has greater authority.¹⁷⁹

V. KOREA MUST RE-PRIORITIZE ENVIRONMENTAL CONCERNS OVER ECONOMIC DEVELOPMENT IN ORDER TO MAKE EXISTING ENVIRONMENTAL REGULATIONS EFFECTIVE

Although Korea is more concerned about the environment today and greater public awareness and participation in environmental affairs exists, Korea still emphasizes economic development over environmental vitality. Asian exporting industries fear that higher environmental standards threaten their international competitiveness.¹⁸⁰ However, economic studies do not provide solid empirical support for this belief.¹⁸¹ Although tough

¹⁷¹ *Id.* at 71-72.

¹⁷² *Id.*

¹⁷³ See Cho & Olsen, *supra* note 97, at 112.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 114.

¹⁷⁷ *Id.*

¹⁷⁸ Dong-Oh Cho, *supra* note 165, at 80.

¹⁷⁹ *Id.*

¹⁸⁰ Jeffrey L. Dunoff, *Understanding Asia's Economic and Environmental Crisis*, Book Review, *Asian Dragons and Green Trade*, 37 COLUM. J. TRANSNAT'L L. 265, 266 (1998).

¹⁸¹ See Yuquing Xing & Charles D. Kostad, *Do Lax Environmental Regulations Attract Foreign Investment?*, 21 ENVIRONMENTAL AND RESOURCES ECONOMICS 1 (2002); see also Judith M. Dean et. al.,

environmental regulations can impede or discourage FDI in some industries, it is not appropriate to conclude that FDI alone dictates the direction of FDI flow.¹⁸² Despite this indefiniteness, politicians and business people continue to firmly believe that strict environmental regulations will hurt economic competitiveness.¹⁸³ As a result, the Korean government is often influenced away from active enforcement of its environmental regulations.

Since the 1960's, the Korean government has been committed to improving its national economy and increasing its per capita income.¹⁸⁴ In order to "accelerate economic growth, the government placed the first national priority on the development of industrial bases."¹⁸⁵ Korea's desire to advance economically contributed to tremendous environmental deterioration¹⁸⁶ because Korea ignored environmental protection.¹⁸⁷ A recent reclamation project demonstrates Korea's continuing preference for economic development over environmental health. The "Saemangeum" project, which was an effort to convert tidal flats into large farmlands, had tremendous negative environmental consequences.¹⁸⁸ Despite environmental concerns related to this dike construction project,¹⁸⁹ the Korean government in 2001 pushed ahead with this reclamation project because it was unwilling to cancel a project that was over seventy percent complete, and towards which the government invested over one billion dollars.¹⁹⁰

Korea's policy to advance economic development is also indicated by the lack of environmental regulations specific to Korea's SEZs and newly created FEZs. Korea lacks environmental regulation specifically for its

Are Foreign Investors Attracted to Weak Environmental Regulations? Evaluating the Evidence from China (World Bank, Policy Research Working Paper No. 3505, 2005). Chinese-sourced equity joint ventures in highly polluting industries were deterred by stringent pollution regulations; however, non-Chinese sourced equity joint ventures were attracted to areas with more stringent environmental regulations.

¹⁸² *Id.* at 15.

¹⁸³ Dunoff, *supra* note 180, at 267.

¹⁸⁴ Yeon-Chang Koo, *Legal Aspects of Environmental Protection in Korea*, 7 KOREAN J. COMP. L. 1 (1979).

¹⁸⁵ *Id.* at 2.

¹⁸⁶ *Id.* at 3. For example, Seoul grew rapidly during the 1960s and 1970s, which resulted in massive pollution problems such that water from Han River was not potable.

¹⁸⁷ Ferris, *supra* note 104, at 160.

¹⁸⁸ The Saemangeum tidal flat was one of the five largest tidal flats in the world, home to approximately 370 species of sea creatures, and the nation's biggest stopover for migratory birds. Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 53.

¹⁸⁹ See Heung-Jae Lie et al., *An Integrated Study on the Marine Environmental Impacts by the Saemangeum Sea Dike, Korea: Introduction and Preliminary Results*, SAEMANGEUM COASTAL RESEARCH CENTER, KOREA OCEAN RESEARCH AND DEVELOPMENT INSTITUTE 700 (2004).

¹⁹⁰ Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 54.

SEZs, including the newly designated FEZs.¹⁹¹ Instead, it relies on existing environmental regulations to guide development in the FEZs without additional considerations. There is also some evidence that environmental standards may be waived or overlooked for investments within the SEZs.¹⁹² Despite such evidence, the FEZ Act still provides that the “possibility of securing the environmentally sound and sustainable development” is a matter to be considered by the FEZ committee.¹⁹³ It provides that a plan for an FEZ must include a “program for environmental preservation.”¹⁹⁴ On the other hand, the Korean legislature permits authorities to reduce or waive any environmental impact assessment levies, charges, or fees.¹⁹⁵ Similarly, approval by the Minister of Finance and Economy supersedes other environmental or planning approvals.¹⁹⁶ These provisions by the Korean government put the environment at grave risk and displace any other environmental protection measures in place.¹⁹⁷

VI. KOREA MUST CAPITALIZE ON THE LESSONS LEARNED FROM CHINA’S SEZs AND THE U.S. CWA AND CZMA IN ORDER TO MITIGATE THE POTENTIAL FOR ENVIRONMENTAL DEGRADATION IN KOREA’S FEZs

Korea can take actions to reduce the potential for environmental harm in IFEZ by avoiding the mistakes made by the Chinese and implementing effective environmental regulations specific to FEZs.¹⁹⁸ A greater emphasis on environmental protection rather than economic development would also aid in reducing environmental harms. Korea should also amend its WCQA and CZMA in order to avoid the inadequacies revealed in the U.S. CWA and CZMA. Finally, Korea should address: 1) inadequate implementation; 2) narrow definitions of standing in environmental actions; 3) problems with judicial review; and 4) inadequate remedies in environmental actions.

¹⁹¹ Richardson, *supra* note 13, at 218.

¹⁹² *Id.* at 217.

¹⁹³ The FEZ Act, *supra* note 7.

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ Richardson, *supra* note 13, at 217-18.

¹⁹⁸ Profaizer, *supra* note 13, at 342 (China developed zoning laws specifically for its SEZs in order to increase environmental protection within the SEZs).

A. *Korea Must Take Specific Actions to Avoid the Environmental Degradation Experienced in China's SEZs*

In order to avoid the environmental degradation experienced by China's SEZs, the Korean government must take some bold steps towards strengthening its environmental regulatory system. One of the problems with China's SEZ was lack of expertise in its environmental managing authorities. Korea, similar to China, has a decentralized system of environmental regulation and some evidence of non-enforcement of environmental regulations in the FEZs.¹⁹⁹ Korea must require high standards of expertise in environmental managing authorities and carefully monitor the effects of decentralization. In addition, Korea does not have a system of environmental regulations specifically for its FEZs. China developed a system of regulations putting greater environmental protection measures for its SEZs. Similarly, Korea should assess the need for stronger regulations in its FEZs and if necessary, develop new regulations targeted towards development in the nation's FEZs.

B. *Korea Should Place a Greater Emphasis on Environmental Protection and Less on Economic Development*

Korea is an industrializing nation with potential for further economic growth. Growing importance exists over environmentalism, following the country's experience with environmental degradation during its industrial growth era. Although growing environmentalism is positive, it is insufficient. As a country with high levels of environmental awareness, Korea must reconsider its priorities and place greater importance on environmental protection. Korea's governmental authorities should recognize that stringent environmental regulations do not hinder economic growth and act responsibly in protecting its vulnerable ecosystem.

C. *Korea Should Amend Its WQCA and CZMA in Order to Avoid the Inadequacies Revealed in the U.S. CWA and CZMA*

Part IV examined the deficiencies in two of Korea's key environmental regulations for its FEZs, the WQCA and the Korea CZMA, by comparing them with the U.S. CWA and CZMA, the models for Korean regulations. This section makes specific recommendations to improve the effectiveness of Korea's two key environmental provisions for its FEZs.

¹⁹⁹ For more on China's SEZs, see Part II, *supra*.

Korea's water quality program and the coastal management program need to be amended to address existing problems that hinder the achievement of water quality and coastal protection goals. Expanding the WQCA to regulate broader areas of non-point sources of pollutant discharges and including the regulation of water quantity as an additional method of water quality management is essential in order to maintain and improve Korea's water quality. Further, integrating all laws that impact coastal areas under the MOMAF is mandatory, and incentives should be given so that local governments can participate in national and regional CZM plans. Korea should also develop efficient cooperative models between all agencies that have jurisdiction in coastal areas. Another option would be to extend MOMAF's regulatory authority over coastal development projects which are currently under the jurisdiction of different ministries. This type of gradual strategy is crucial to overcoming both legal and government agency barriers to coastal protection.

D. Korea Must Effectively Implement the Environmental Regulations Already in Place

Korea has well-developed environmental regulations, but its administrative practice in implementing environmental regulations is not as developed.²⁰⁰ Korea does not implement environmental regulations to the same extent as developed countries, and this may have disastrous results.²⁰¹ There is a huge concern because "even if the legislature passes environmentally ambitious legislation, the bureaucracy vitiates its goal by administrative practice."²⁰² An example of this occurrence is clearly evident in the Saemangeum project.²⁰³ This reclamation project received much criticism and opposition because the government pushed ahead with the controversial despite their awareness that creating a freshwater lake posed environmental problems and were aware of public criticisms. The Ministry of Environment and many environmental groups opposed this project.²⁰⁴ Korea should improve its implementation of environmental regulations through better coordination and a concerted effort between different governmental agencies.

²⁰⁰ Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 52.

²⁰¹ *Id.* at 47.

²⁰² *Id.* at 53.

²⁰³ For additional discussion on details of the Saemangeum project, see discussion *supra* Part IV.D.

²⁰⁴ Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 53

E. *Korea Must Broaden the Definition of Citizen Standing in Environmental Actions*

One of the greatest challenges of Korean environmental regulation is the lack of opportunities for citizen participation.²⁰⁵ Korea must allow for additional opportunities for citizen participation by broadening its standing requirements and by granting citizens additional rights to intervene in government actions.

Korea's judiciary system, with its unclear jurisprudence regarding citizen standing in environmental suits, contributes to the poor environmental regulatory regime.²⁰⁶ Though the right to a healthy environment is a Constitutional right,²⁰⁷ the Constitution does not provide for concrete and direct civil rights automatically, making it difficult to determine what and who is protected.²⁰⁸ Korean courts use the legal interest test for standing, which means that a plaintiff who seeks legal redress for environmental harm must demonstrate some type of specific injury to his or her own legal interest.²⁰⁹ Standing is "so narrowly formulated that any litigation to vindicate collective interest is not allowed."²¹⁰ Thus, unless an environmental statute contains protections for private individuals, a citizen or the general public cannot bring suit and seek judicial review for environmental harm.²¹¹ In the United States, this problem is mitigated by important and effective statutory provisions for citizen suits.²¹² However, Korea's regulatory system lacks similar provisions. Relaxing standing requirements to citizens and environmental groups allows such groups to bring enforcement actions and increase the efficiency of environmental

²⁰⁵ See generally Hoi-Seong Jeong, *Citizen Involvement in the Environmental Policy Process in Korea*, 11 GOOD SOCIETY 46-56 (2002) (arguing that effective environmental policy-making requires citizen participation).

²⁰⁶ *Id.* at 54.

²⁰⁷ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 105. Article 35 of the Constitution of Korea provides that "[a]ll citizens shall have the right to a healthy and pleasant environment." The Korean Constitution was amended in 1980 to provide for this right.

²⁰⁸ See So, *supra* note 113.

²⁰⁹ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 110.

²¹⁰ Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 56.

²¹¹ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 110; see also Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 57. In a case of nuclear reactors, opponents do not have standing because the court interprets safety clauses in statutes regulating nuclear reactors to exist to protect the public interest in general rather than any concrete individual's interest. Therefore, individual residents do not have standing to sue. However, courts have conferred standing on individuals living within an area where the environmental impact is being assessed under the EIA.

²¹² Carl F. Schwenker, *Protecting the Environment and U.S. Competitiveness in the Era of Free Trade: A Proposal*, 71 TEX. L. REV. 1355, 1367 (1993).

regulations.²¹³ Korea should adopt new provisions giving citizens increased standing in environmental suits.

F. Korea Must Broaden Its Definition of Justiciability for Purposes of Judicial Review

In addition to increasing citizen standing, Korea must provide the public with additional opportunities to intervene in governmental actions. Because a government agency's environmental determination will be subject to judicial review only if it involves an "administrative disposition,"²¹⁴ it further complicates judicial enforcement. An example of an administrative disposition is when a government agency exercises public powers, like rejecting development permit applications.²¹⁵ When a government agency is using its private powers, like purchasing a fleet of cars for government use, it is not subject to judicial review.²¹⁶ This has been problematic since Korean courts have held that environmental impact assessments are an exercise of private power, not subject to judicial review.²¹⁷ This means that the only time that a private citizen can bring a suit for an environmental disposition is when an agency makes a final disposition on the project. Typically, by that time, the proposed project is likely to have been completed or is at least nearing completion.²¹⁸ At such time, a citizen suit would be useless. Another problem is that courts are very deferential to agency decisions.²¹⁹ This is disadvantageous to the public and makes victory in environmental suits difficult. Providing the means for the public to intervene in government actions before environmental harm is done is necessary for a better environmental regulatory system in Korea.

²¹³ Benedict Sheehy, *International Marine Environmental Law: A Case Study in the Wider Caribbean Region*, 16 GEO. INT'L ENVTL. L. REV. 441, 470 (2004); see also Katherine Bailey, *Citizen Participation in Environmental Enforcement in Mexico and the United States: A Comparative Study*, 16 GEO. INT'L ENVTL. L. REV. 323, 340 (2004) (U.S. environmental regulations are more effective even though Mexican environmental regulations are similar in both substance and in administrative regulations because the U.S. offers its citizens a litigation option).

²¹⁴ Cho; *Law and Politics in Environmental Protection*, *supra* note 104, at 55. Administrative disposition is similar to the U.S. doctrine of ripeness. Disposition refers to actions that a national or public organization takes that directly structure or determine the rights and duties of citizens. This has prevented many people from challenging administrative actions for their own interests.

²¹⁵ *Id.* at 55-56.

²¹⁶ *Id.* at 55-56.

²¹⁷ *Id.* at 56.

²¹⁸ *Id.*

²¹⁹ *Id.* at 58.

G. *Korea Must Enact Sufficient Judicial Remedies in Environmental Actions*

Korea does not have adequate judicial remedies available to environmental victims and must develop a system to compensate those who are harmed.²²⁰ Because the right to standing in an environmental suit is limited, citizens have attempted suits under tort or nuisance claims. However, because the environmental regulatory system requires that injury be demonstrated to bring a suit under these theories, citizens whose property was not directly harmed cannot bring a suit.²²¹ Further, as a civil law country, Korea does not award unforeseen extraordinary, nominal, or punitive damages.²²² Injunctive relief is also unavailable in the Korean legal system,²²³ as are class action suits and jury trials.²²⁴ Korea should address this problem through the enactment of new laws or changes in its judicial system to award better compensation and injunctive relief for environmental harm already caused and for foreseeable harm.

In order to increase the quality of life for all its citizens, Korea must take bold steps towards strengthening its environmental regulatory system. Any new environmental legislation or amendment to existing regulations must be supported by better administration and implementation, and it must improve the citizen participation process in Korea's environmental affairs. Citizens and environmental groups must be granted increased standing to bring a claim for both government and private actions which degrade the environment. Along with broadening standing requirements to citizens and environmental groups that show a great interest in environmental protection, Korea should also adopt stronger administrative regulations that would efficiently enforce environmental regulations. Making the changes recommended in this section should lessen the potential for environmental destruction and increase likelihood that Korea's environmental regulatory system will be effective against the development pressures of IFEZ and all other existing and future Korean FEZs.

²²⁰ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 110.

²²¹ Cho, *Law and Politics in Environmental Protection*, *supra* note 104, at 61. Before the enactment of the Wetland Preservation Act, a private citizen was not able to bring a suit to compel a developer to consider ecological values of wetlands before reclaiming based on a constitutional right; he or she had to be an adjacent property owner with legal interest.

²²² *Id.* at 62.

²²³ *Id.*

²²⁴ Cho, *An Overview of Korean Environmental Law*, *supra* note 107, at 110.

VII. CONCLUSION

This comment has argued that as part of the IFEZ, Songdo City is likely to experience tremendous rates of FDI-fueled economic growth, and as a consequence, there will be many environmental challenges with the development of the IFEZ. As examination of Songdo City demonstrates, there are many environmental issues which must be addressed in development of Korea's FEZs. Further, Korea must keep in mind that growth in the FEZs may greatly exceed projections, as was the case in China's SEZs.

Korea's FEZs, unlike the Chinese SEZs, are supported by a better environmental regulatory system, but Korean environmental regulations are still inadequate. There are major problems with Korea's environmental regulatory regime, including lack of enforcement, narrow definition of judicial review and standing, inadequate remedies, and gaps in some key environmental regulations. Although environmentalism is growing in Korea, a national policy towards economic development further exacerbates Korea's environmental problems. Considering that such an environmental regulatory system is being tested against the world's biggest real estate development project at Songdo, tremendous environmental degradation is likely to occur if the identified problems are left untreated.

Korea must re-assess its current environmental regulatory system and make the necessary changes to its regulations, policies, implementation methods, and the judiciary. Only when these improvements are made will the environmental regulatory regime in Korea be effective against environmental challenges brought on by the development of Songdo City, IFEZ, and the remaining FEZs.