Volume 19 | Issue 6 | Number 1 | Article ID 5557 | Mar 15, 2021

The Evolution of the East Asian Eco-Developmental State

Stevan Harrell, Mary Alice Haddad

***Abstract**: The four major countries of East Asia—China, Japan, South Korea, and Taiwan—form one of the most densely populated regions on earth, and through the course of the late 20th and early 21st centuries the region experienced some of its fastest economic growth, propelled by the policies of state-led developmentalism. As a result of this density and these policies, the four countries in turn became some of the most environmentally degraded. As each achieved middle-to-high income status, however, the populace and then the regime in each country realized that they could not sustain either rapid economic growth or popular legitimacy without addressing the environmental consequences of this fast growth. The four states thus changed their fundamental economic policies from pure developmentalism to what we call eco-developmentalism, an attempt to reconcile economic prosperity with environmental sustainability. Although success so far has been mixed, this turn to eco-developmentalism has allowed these states to claim world leadership in mitigating environmental degradation.*[1]

***Keywords:** development, environment, East Asia, China, Japan, Korea, economic, infrastructure, resources.*

East Asia's four largest countries[2]—the People's Republic of China, the Republic of China on Taiwan, Japan, and the Republic of Korea—contain some of the most densely populated regions in the world and support 21% of the world's population. Their estimated GDP constituted about 25% of the world's total in 2019 (Statistics Times 2020)[3], up from just 7% in 1960 (World Bank n.d.). The dramatic growth of East Asia's economy in the past half-century is widely attributed to the economic success of the East Asian developmental states, which have staked their popular legitimacy on economic development and the material benefits that such growth brings to their citizens. At the same time, the developmental states' extreme focus on material growth, particularly in the early decades of their high growth period, led to intense pollution and environmental catastrophes. Betting on the populace's propensity to value increases in material living standards above all, state planners and corporate enterprises often externalized the air, water, soil, forests, and biodiversity of their territories as something that they could take care of later, perhaps much later, after they had achieved material prosperity.



The Three Gorges Dam, China

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

Later has come. China, Japan, South Korea and Taiwan have all reached upper-middle or even high-income status, and the pollution and environmental degradation have become so intense that they threaten the health and livelihood of residents in urban as well as rural areas. Citizens across the region no longer automatically prioritize additional material wealth over cleaner air, water, and soil, more buildings over more greenspace. Beginning in Japan in the 1960s, and spreading to Taiwan and Korea in the 1980s and China in the 1990s, citizens and civil society groups began to demand that their governments shift priorities away from growth-at-any-cost. The governments were slow to take notice at first, but by the 1970s in Japan, the 1990s in Korea and Taiwan, and after 1998 in China, East Asia's states began to modify their emphasis on growth to incorporate environmental restoration and preservation into their policies and practices.

This pro-environmental shift in policy orientation represents a fundamental change in the nature of these states—from purely developmental to what we call eco-developmental—which recognize that greater environmental sustainability is critical for them to continue to grow economically while maintaining their domestic political legitimacy and assert international leadership. East Asia's eco-developmental states have thus committed themselves to some sort of balance between economic development and environmental sustainability. Commitment of course does not equal results, and the actual record of the four East Asian states has been mixed. China in particular continues to increase its greenhouse gas emissions, and it attempts to mitigate this growth partly by building massive, environmentally destructive hydroelectric dams. It also exports environmental degradation by building power plants and hydroelectric dams in many Belt and Road Initiative (BRI) countries. Japan, Korea, and Taiwan also export environmental degradation by continuing to import massive amounts of fossil fuels and wood. But all four states have made immense progress in curtailing air pollution and deforestation, and are actively addressing a multitude of other environmental problems. Part of the four states' turn to eco-developmentalism is based on public pressure: under these regimes, civil society groups have continued and frequently expanded their environmental action, sometimes in active opposition to and sometimes in wary or even enthusiastic cooperation with state environmental agencies. In addition, the desire to be seen around the globe as environmentally responsible has also accelerated the turn toward eco-developmentalism.

The Importance of East Asia

Despite its prominence in the world economy and the relative wealth of the four countries included in our analysis, East Asia is resource poor. Japan and Taiwan both import 93% of their energy, and Korea 81%. Although China imports a much smaller percentage of its total primary energy—around 16%—the total volume of imports—270 million tons of coal (Reuters 2018) and 3.06 billion barrels of crude oil (MAREX 2018) in 2017—still makes China the world's largest total net energy importer (IEA 2017: 60-69). East Asia's fossil-fuel thirst thus contributes to environmental degradation and economic imbalance in oil- and gas-producing countries. All four countries also import a large percentage of the wood they use in construction and manufacturing, something that has allowed Japan, Korea, and Taiwan to restore the forest cover lost before and during the early days of the developmental state and allowed China to increase its forest cover from 8-11% in 1960 to over 21% today (Robbins and Harrell 2014). The result is that all the East Asian countries, along with other high-consuming countries like the United States, are causing deforestation abroad—their

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

construction and furniture industries have depleted the forests of Indonesia, Malaysia, the Solomon Islands, and particularly the Russian Far East, and have negatively impacted forests as far away as Gabon in west-central Africa (ibid.). Finally, food imports, especially China's enormous appetite for soybeans from Brazil and Argentina (Rapoza 2015; Gu and Thukral 2018), have contributed to deforestation and land degradation in those areas as well. All four countries' enthusiasm for seafood has put pressure on world marine fisheries resources, threatening biodiversity (Cao et al. 2017).

The East Asian region also accounted (in 2012) for 48% of the world's manufacturing *exports* (TMI 2013), a major reason for its polluted cities and rivers and its high GHG emissions. In 2017-18 China, Japan, Korea, and Taiwan accounted for 51%, 6%, 4%, and 1.5% of the world's steel production (World Steel Association 2018, 2019), and all four ranked among the top 10 net exporters of steel, meaning that the toxic effects of coal burning on the air and of steel manufacture on the soil and water resources are concentrated locally. Similar effects result from automobile manufacture in Japan and Korea, which respectively account for 10% and 4% of autos produced worldwide (OICA n.d.)[4], and 12.6% and 5.2% of automobile exports ranked by monetary value, ranking second and sixth in the world (Workman 2019). Other manufactures such as leather goods, textiles, machine parts, and electronics, all of which are major East Asian exports, also contribute to the region's high rate of pollution from producing goods that will be consumed abroad.

Because of the intensity of their local environmental problems and their rapid economic growth in the postwar era, all the East Asian countries except Taiwan have become important participants in international forums dealing with the environment. China, Japan and Korea have participated at least since the initial United Nations Conference on the Human Environment in 1972 (UN 1972) and although China participated only in very limited ways during the Maoist era of planned economy and self-reliance from 1949 to 79, it began to take an active role starting from the 1992 Rio Meeting on Environment and Development, and has been an active participant since.

East Asian countries' international connections work in two ways. In some cases, the desire for international recognition and integration has led these countries to adopt more progressive policies on the environment. In other cases, as their economic and political influence grows, East Asian countries have been able to influence international dialogues on the environment in their desired directions.

On the specific issue of climate change, China's position has shifted from its initial insistence in the 1990s that economic development should take priority over environmental sustainability, to its more recent proactive involvement with international efforts to decrease GHG emissions. China's commitment to reduce its own GHG emissions has also been a big force in driving down the global cost of wind and solar power generation, thus contributing to rising use of renewable energy across the globe. China has also become a leader in endangered species conservation, having cooperated with international conservation NGOs such as The Nature Conservancy (Litzinger 2004; Moseley and Mullin 2014) and the World Wide Fund for Nature (formerly World Wildlife Federation). In particular, China has gained international respect for its efforts toward the restoration of the iconic megafaunal species *Ailuropoda melanoleuca* (Giant Panda) which has become a national symbol as well as an object of environmental concern (Songster 2018).

In addition to the renewable energy sector, Japan and Korea (and to a lesser extent Taiwan) have focused on helping manufacturing firms adjust their products and

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

processes to be more eco-friendly. Just as Japan was the first East Asian developmental state, it was also the first to adjust its developmental policies to incorporate environmental priorities into its co-development plans with manufacturers. For example, its investments in high-efficiency and electric vehicles paid off in a big way with the explosive popularity of the Toyota Prius. That model sold 300 vehicles during its launch year in 1997, and twenty years later, in 2017, more than 1.5 million Priuses were sold globally, and the total electric vehicle market worldwide had risen to almost 12 million vehicles, representing a reduction of 90 million tons of CO2 (Toyota 2018). China now has almost half the world's electric cars on its roads (IEA 2020). In the construction industry, Japan's policies to encourage waste reduction and recycling also offer important models that other countries follow; Japan now has a 100% recycling rate for industrial concrete (Tam 2009), and China has recently reduced the energy used in producing a ton of cement by about a third of what it was just a few years ago (Li et al. 2017: 1841).

Although they followed Japan's lead by a few years, South Korea and Taiwan have also developed extensive green growth initiatives. South Korea's 2009 National Strategy for Green Growth, with its associated Five-Year Plan, was perhaps the most comprehensive in the region, articulating clear goals for resource conservation and emissions reduction, as well as significant public and private investment in green technology (UN n.d.). Similarly, Taiwan has found that nurturing "green" industrial products and related services promotes economic growth and helps mitigate the economic effect of the decline of more polluting traditional industries (Chao 2017; Hu et al. 2017).

In Japan, Korea, and Taiwan interactions between state and civil society show important interplays with global environmental organizations and agendas. The governments of Japan and Korea were initially reluctant to sign international protocols on labeling of genetically modified organisms, but pressures from civil society groups that were linked to international environmental organizations led both countries to ratify the Cartagena Protocol on Biosafety. While sometimes at odds with those advocating for CO2 reductions, anti-nuclear activists in Japan, Korea, and Taiwan have advocated for renewable policies across the region.

East Asia as a Region in Environment and Environmental Politics

A skeptic might question the value of discussing the environmental policies of China, Japan, South Korea and Taiwan together, since they have such different political systems and political cultures. We believe, however, that there are three strong reasons for writing about East Asia as a region. First, despite their obvious differences, East Asian countries have a number of historical, cultural, political, economic, and ecological similarities. Second, because of geographic proximity, the countries in the region are highly connected to one another and have been for centuries. Those interconnections tend to be obscured in country-specific analyses, underscoring the value of comparative scholarship covering the entire region. Finally, given the similarities among them and the close connections between them, the differences among the countries allow for valuable controlled comparison of their environments along with their environmental cultures and politics.

First and foremost, East Asia is a climatic and ecological region that shares air, water, and natural wildlife resources. The whole region is affected by the geologic fault lines that separate the Asian continent from North America, the Pacific Ocean, and the Philippines. The region shares a typhoon season, heightening its collective exposure to

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

climate change-related risks. Dust from storms originating in the Loess Plateau of North China and the Inner Mongolian desert to the north is a major contributor to lowering air quality in Korea and Japan, and on certain days can even be detected in Seattle and San Francisco.

Similarly, East Asia's economies are highly interconnected—China is the top trading partner for Japan, Korea, and Taiwan; and those three countries represent China's #2, #3, and #4 trading partners after the United States. Just as European and American-owned manufacturing companies exported their air and water pollution to more permissive regulatory regimes in Japan, then to Korea and Taiwan, those countries are now exporting their pollution (and also many of their manufacturing jobs) to the low wage labor and looser regulatory regime of China. Much of Taiwanese-owned manufacturing, particularly in the electronics and apparel sectors, now takes place in China, along with substantial amounts of Japanese- and Korean-owned manufacturing. These activities of course not only boost incomes but affect China's environment in negative ways, primarily through pollution (Hatch and Yamamura 1996; Reardon-Anderson 1997; Terao and Otsuka 2007; Wilkening 2004; Lora-Wainwright 2017). Air current flows mean that the pollution produced by these companies then drifts back to their home countries. Thus, unlike when the US and Europe outsourced their polluting industry to Japan, outsourcing manufacturing from Japan, Korea, and Taiwan to China does not entirely outsource the related pollution. Relatedly, when Japan, Korea and Taiwan invest in cleaner supply chains, greener technology, and transportation methods for their sub-contractors in China, it can contribute to the improvement in the quality of their own air, water, soil, and marine resources.

Historically, the eastern half of China, along with all of the Korean Peninsula, Taiwan, and Japan south of Hokkaido, has maintained an unusually high population density for multiple centuries, based on an agrarian order in which large numbers of peasant farmers grow grains intensively and pay rents and taxes to a landlord elite and to a centralized state staffed by members of this elite. Many of the specific problems of East Asia's environment, including pollution, deforestation, and species loss—are related to the high population density recently compounded in its effects by rapid economic growth and urbanization.

East Asian countries also share both elite and popular cultural ideas about human-environment relations. The elite cultures of East Asia were dominated by a tradition that we can loosely call "Confucian," which expresses diverse views that have been drawn on by political leaders to promote different agendas at different times. During China's imperial era and Mao's rule, the perspective that nature exists to serve humanity, and thus human action can prevail over or control nature, was promoted. This attitude was exemplified by the slogan "humans are destined to triumph over nature" (*ren ding sheng tian*), which can be found on a seaside monument to engineering on the east coast of Taiwan as well as in Maoist propaganda from 1960s and 1970s China (Shapiro 2001, Weller 2006).

More recently, pro-environmental leaders and activists in all four countries have touted another aspect of the Confucian tradition, one that promotes harmony or even unity between humans and nature. This idea is embodied in the slogan "unity of nature and people" (*tian ren heyi*), which has evolved in China into the modern cry to build an "ecological civilization" (*shengtai wenming*; Schmitt 2016). At the popular level, peasant proverbs and notions of village ecology and balance, such as the Japanese "village and mountain" (*satoyama*), stress the ecological integrity of the agrarian community (Takeuchi et al, 2002).

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

Interestingly, the interconnection between humans and nature, and the emperor's historic responsibility for maintaining harmony in both, meant that in contrast to the Christian view of natural disasters as "acts of God" for which leaders were not responsible, natural disasters such as floods and earthquakes were seen as a sign that a leader had lost the Mandate of Heaven, and should perhaps be replaced. Thus, leaders across East Asia, even those not subject to democratic political pressures, have felt a responsibility to address environmental pollution and environmental disasters that threaten people's "right to subsistence" (Tu 1989; Perry 2008).

Although they operate in a widely diverse set of political regimes, environmental advocates across the region rely on a remarkably similar set of strategies to influence policy and state action. Everywhere, more organizations use informal networking—either with or without state involvement—and public education as their primary advocacy strategies than use more direct forms of action such as public protest, lobbying, and litigation. Whom you know has always been more important than what you know in East Asian societies (and elsewhere), and this general cultural trend is reflected in the strategies utilized by environmental activists in the region.

Additionally, East Asian nations all lack a tradition of citizen participation in governance above the very local level. Thus, across the region mechanisms of citizen participation through electoral democracy or other formal means to influence national legislatures or bureaucracies are relatively new and tend to be underdeveloped, even among the democratic states. At the same time, all the countries have strong traditions of local governance. Also, perhaps significantly, the region has a long and diverse tradition of millenarian rebellions and other popular movements based on religious or other local solidarities (Perry and Harrell 1983). This paradox—high levels of civic engagement at the local level and low levels of activism at the national level—contributes to many of the specific forms of environmental action that we find throughout the region.

Finally, since World War II, the East Asian states have all shared the consensus of the developmental state, a governing body that derives its legitimacy from its ability to improve material consumption among its citizens. The developmental state's initial bargain—asking citizens to accept environmental degradation in return for an increased standard of consumption—began to fray as economic prosperity increased and environmental conditions deteriorated, leading to the formation of the eco-developmental state as a new basis for policy and state legitimacy.

Variation within East Asia

Although they share many similarities, the differences among East Asian countries also make the region productive for academic inquiry. Precisely because a regional focus allows scholars to control for the many historical, ecological, economic, and cultural variables that the countries have in common, it becomes possible to engage in a detailed investigation into the ways that biophysical, sociocultural, administrative, legal, and geopolitical differences affect political behavior.

Perhaps most obviously, there are large biophysical differences among the countries. Because of China's continental size and location, in contrast to peninsular Korea and insular Japan and Taiwan, there are large differences in resource self-sufficiency: Although China has the largest trade volume of any nation, because of its size it is much more self-sufficient and less dependent on trade than its smaller neighbors. It produces more of its own energy, forest resources, and even food than the other nations, and this difference

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

affects the ability of each country to determine its environmental policies, particularly with respect to energy. We can see this especially with respect to nuclear power politics. Historically, Japan has relied heavily on nuclear power, getting as much as 30 percent of its electricity from that source before the 2011 Fukushima triple disaster (World Nuclear Association 2019), and since then has emphasized conservation. Korea generated 29% of its electricity from nuclear plants in 2017, but the Moon administration has announced plans to gradually eliminate nuclear generation as a power source (World Nuclear News 2017). Taiwan built three nuclear plants during the period of authoritarian rule, but popular protests have rendered a fourth plant infeasible since democratization, and the regime is now committed to a fast transition to heavy reliance on renewables, though the means for achieving that goal are only vaguely defined. Nuclear power remains a difficult political issue for all of the countries in the region, and its future has not yet been determined.

Socioculturally, the differences among the countries are quite complex. Many of them stem from the recent historical trajectories of governance models: Japan as a bureaucratic state with democratic elections throughout the postwar era, Korea and Taiwan with traditions of authoritarian governance and transition to democracy in the late 20th century, and China as an authoritarian state that nevertheless changed its economic model from state socialism to bureaucratic capitalism after 1980. These differences influence the nature of regulatory regimes, ministerial turf wars, and most importantly environmentalist opposition to and cooperation with state agencies in the four countries. The strength and character of democratic politics—its institutions, (e.g., elected legislature, free press, independent judiciary, and autonomous advocacy organizations), as well as its practices (e.g., electoral politics, public protests, community organizing, etc.)—are commonly thought to be critical for determining the environmental politics of a country. East Asia allows us to examine that assumption: although all four countries have very different experiences with democracy, they all initially followed a developmental state model and have made the transition to eco-developmental states.

Central-local government relations also differ. All four countries have strong central governments and a common practice of local policy experimentation prior to national policy implementation. However, the center-local political game is played very differently in the four places, and the capacity for local innovation varies as well. In China, localities can practice what we might call "guided autonomy" or a limited ability to experiment with policy implementation, so that policies such as the emissions trading markets or renewable energy subsides are often tried out locally before being implemented on a wider scale. In Japan local municipalities frequently experiment with waste, emissions, and building ordinances in an effort to increase the quality of their local environment. When those local models are effective, they can be adopted by multiple localities and eventually become national policy. Similarly, in Taiwan local governments are able to experiment with environmental policies, and their models of what to do as well as what not to do can be adopted nationally. In Japan and Taiwan, pioneering local governments often "guide" the national governments in the area of environmental policy. Although Korea has also seen a rise in the level of autonomy of its local governments in recent years, they remain highly constrained and have the least capacity to act as environmental policy innovators of the four countries in this study.

The role of law and lawyers also varies. In none of these countries has litigation traditionally played as great a role in society as in the Euro-American world, and its importance differs

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

considerably from one country to another. Although environmental lawsuits have been permitted in China and Taiwan since the early aughts (Economy 2005; Li Jianliang 2010), they play a minor role in comparison to popular protest. In contrast, in both Japan and Korea lawyers and lawsuits have played vital roles in the environmental movement and in environmental policymaking. Victory in the early 1970s by pollution victims, in what came to be known as Japan's Big lawsuits (Upham 2009), served as a critical turning point for the re-orientation of the developmental state away from growth-first towards a model that promoted more sustainable development. In Korea, lawyers' associations were crucial players in the successful democratization movement (Lee et al. 1999; Ku 2002), and they continue to influence the evolution of Korea's eco-developmental state (Cho 1999). These differences have implications as all four countries increase their participation in rights-based international forums and join various treaties and protocols.

Diachronic differences are also important to any comparative project, and especially here as we seek to highlight the transformation of developmental to eco-developmental states across the region. Countries that experienced this transition at later dates have done so in a different world context, particularly with regard to climate change and its effects. Japan, which was the first East Asian country to industrialize, and the first to face the negative environmental legacy of the developmental state, it was a pioneer in developing environmental policies, based primarily on regulation. But it was not until the end of the 20th century that the bureaucratic processes of regulation became transparent enough, and global environmental NGOs became powerful enough, to allow popular participation to influence policy significantly. Korea and Taiwan not only developed later, they democratized later. It is partly because of this timing that they have been much more closely connected to worldwide environmental movements. China has not democratized, but is eager to be seen as a player in international environmental politics. It has developed a system of top-down environmental regulation that also allows a small amount of popular environmental protest (Lora-Wainwright 2017), but activism has generally been restricted to the local level (Ho 2007, Teets 2014).

All of these differences mean that the basic dynamics and priorities in the environmental politics in the four countries vary widely. While there are remarkable similarities in the specific strategies utilized by citizens to advocate for pro-environmental policy change, the configuration of environmental politics in the four places is very different. In Japan, which experienced its environmental crisis first and has been ruled by the Liberal Democratic Party for nearly all of the post-war period, environmental organizations have been most effective when they have found allies among the ruling LDP members and inside the bureaucracy and local government. While advocacy organizations have connections to opposition parties, electoral politics has not been a defining element of the environmental movement. In contrast, in South Korea and Taiwan, the environmental movement became fully incorporated into those countries' pro-democracy movements, creating much closer connections between environmental groups and progressive political parties (Ku 1996; Lee 2000; Lyons 2009; Grano 2015; Haddad 2015a). In further contrast, after a brief period of opening up in the 2000s, the CCP has spent much of the last decade tightening state control over environmental organizations and increasing party involvement in their activities. As a result, environmental groups in China tend to be small and local, and if they grow larger, they must find ways to work productively with the government or face shutdown.

In sum, East Asia is an excellent region in which to study the complex dynamics of

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

environmental politics and particularly the way that developmental states can evolve into eco-developmental states. The four countries in the region whose experiences are highlighted here share many ecological, social, cultural, and political characteristics, but they vary in size, resource wealth, history, and especially political systems. This enables us to study in detail how these various factors can influence environmental politics and how national policy can become reshaped by environmental advocacy.

The Recent Trajectory of East Asia's Environment

Because of their geographic proximity and cultural commonalities, and in spite of the differences in size and regime type, the East Asian countries have all experienced a similar trajectory in the politics and policies of the environment—and in the state of the environment itself—since World War II, but at different times and at different speeds, roughly corresponding to the timing of industrial growth. As a result, East Asian countries have followed a similar pattern where growth-first developmental states have evolved into eco-developmental states, modifying high-growth policies to include pro-environmental goals and promote more sustainable economic growth.

First in Japan, then in Korea and Taiwan, and most recently in China, all of the East Asian states supported rapid industrialization and high-speed economic growth that emphasized export-oriented manufacturing industries. As they became economically successful, they also caused environmental catastrophes such as mercury poisoning in Minamata, wintertime PM2.5 “air-pocalypses” in Chinese cities, toxic waste spills in South Korea, and the contamination of indigenous lands by nuclear waste facilities in Taiwan. Industrial pollution endangered the lives and livelihoods of their citizens, threatening the stability of their political regimes. All of the ruling political regimes struggled to incorporate these new environmental concerns into their governance strategies. Japan’s Liberal Democratic Party managed to hold onto power by passing sweeping environmental regulations in 1970 during what came to be known as “the pollution Diet.” The military/nationalist regimes in South Korea and Taiwan failed to get ahead of popular dissatisfaction—the environmental movements merged with pro-democracy movements that resulted in political democratization in the late 1980s in both places. So far, the Chinese Communist Party has managed to keep ahead of the mounting political pressure with increasingly ambitious pro-environmental policies designed to reduce the pollution that can lead to political unrest. This process of transformation from a developmental state to an eco-developmental state was a gradual one that proceeded in fits and starts over many decades.

Beginning with the influential work of political scientist Chalmers Johnson on Japan (1982), which he (Johnson 1986, 1999) and others later extended to Taiwan (Gold 1986) and Korea (Haggard and Moon 1997; Suh and Kwon 2014), the idea of the developmental state has been central to analysis of East Asian economic growth. Developmental states in Japan, Korea, and Taiwan have been characterized by private ownership of most of the means of production; policies set and enforced by a meritocratically selected bureaucracy; and active intervention, through both regulation (including import substitution followed by export promotion) and economic incentives, to guide economic growth in the directions it deems desirable. In service of their development goals, these states have promoted universal education, including both technical and nationalistic content; ensured relative income equality; and limited citizen political participation (Johnson 1986; Beeson 2004). China, having had a planned economy from the 1950s to the early 1980s, gradually “grew out of the plan” and came to resemble

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

the other East Asian developmental states more closely, though state ownership still accounts for a larger share of its economy (Naughton 2015). Across all four countries, governments and businesses clung tenaciously to their pro-growth, anti-environment developmental models until their citizens, whose lives and livelihoods were threatened by industrial pollution, demanded change.

Japan's postwar environmental movement was triggered both by general deterioration of urban air quality and by a series of industrial pollution incidents (Avenell 2012: 27), two of which have become iconic in the world history of environmentalism. In one incident, the Mitsui Company's mines polluted the waters of the Jinzu River in Toyama Prefecture with cadmium, causing the outbreak of a local epidemic of *itai-itai* (Ouch!, Ouch!) disease, which led first to local citizen protests and eventually to litigation in which Mitsui was found culpable and forced both to clean up the river and to pay a large amount of compensation (Yoshida et al. 1999). In the other incident, the Chisso Corporation, a plastics manufacturer in Kyushu, released large amounts of methyl mercury into Minamata Bay, and local people ingesting fish became afflicted with what came to be known as Minamata disease, a potentially fatal degenerative disease of the nervous system. This led to local protests and eventually to the formation of a national environmental movement with important political allies (Almeida and Stearns 1998), one that began to include citizens' groups agitating for nature preservation and food safety in addition to opposing industrial pollution and its negative health effects (Avenell 2012: 429).

In Korea, the rise of an environmental movement followed its own rapid industrialization, about two decades after Japan's. There were local protests as early as the 1960s and 70s, in response to pollution around industrial sites and local demands for contamination. Just as pollution in Minamata galvanized the Japanese, Korean farmers demanding compensation for pollution caused by the Ulsan Industrial Complex galvanized others to demand redress, including residents of Seoul and Inch'on affected by poor air quality. Citizens began to establish organizations to pressure the government and demand change (Ku 2002; Lee 2000). But in the atmosphere of a repressive military dictatorship that lasted until 1987, only local action was possible, and the regime blocked attempts at coordination between local residents of polluted areas and any national or international environmental organizations, seeing them (correctly) as connected with the pro-democracy movement and hostile to the dictatorship (Ku 2004: 191). Once the Chun Doo-hwan dictatorship fell in 1987, the space for political organizing around the environment expanded, and during the 1990s Korea's environmental movement grew rapidly, as part of the growth of civil society organizations generally in the newly democratic country. Now, the Korean Federation for Environmental Movement (KFEM), which was formed in 1993 by the merger of eight national environmental groups, is the largest environmental organization in East Asia by far, boasting more than 80,000 members (Deep Sea n.d.).

Taiwan's environmental movement developed around the same time as Korea's, but in different ways. Like its counterparts in Korea, the Nationalist-ruled state ignored environmental concerns in its headlong (and successful) push for development, setting the stage for environmental opposition. This opposition began, as did environmental movements in Japan and Korea, around local issues, primarily those of water pollution. For Taiwan, the pollution cases that served to spark the national movement were those formed against Sunko Ink in Taichung County (1982-1984) and DuPont in Lukang (1986-1987). Both cases saw local villagers organize and successfully force companies to scrap plans to locate factories in their towns

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

(Ho 2010). Throughout the 1980s victims as well as opposition intellectuals began to raise issues of local water and air pollution along with nuclear power and nuclear waste, the latter prompted by the 1980 proposal to build Taiwan's fourth nuclear power plant. This nascent environmental movement was a primary issue in the programs of the "Outside the Party (Dangwai)" political movement that developed into the Democratic Progressive Party, which was tolerated when it formed in defiance of a ban on the founding of opposition parties in 1986 and was allowed to organize and run candidates when martial law was lifted in 1987. After full democratization in the late 1990s, the environmental movement, among many other social movements, began to resort to mass demonstrations on the one hand, and to formal organizations on the other, becoming, as Ho (2011:120) puts it "a vital component of political life."

Unlike Korea but like Hokkaido and Okinawa (in Japan), Taiwan has a significant indigenous population, which was deprived of much of its rights to land and resources by the Japanese colonial government and then by the Nationalist dictatorship after 1945. As civil society organizations of all kinds blossomed beginning in the late 1980s, the Aboriginal Rights Movement grew along with them. Because of both resource extraction and the storage of nuclear waste on aboriginal lands after 1979, indigenous rights and environmental rights became closely connected political issues in Taiwan, and have remained so to the present day.

China's environmental movement, like its economic development, has taken place most recently. Propelled by the Marxist assurance that only capitalism could despoil the environment, along with the ideological valorization of sacrifice for the revolution, the Communist-ruled state paid little attention to environmental concerns even after the transition in the 1980s to a bureaucratic capitalist system in which state agencies, along with private capital, are important industrial and market actors. Informed by what happened in the other countries as pollution intensified —especially how the environmental movement provided significant support to what became successful pro-democracy movements in South Korea and Taiwan—the CCP sought to model its response on the LDP, which was able to stay in power by enacting ambitious, far-reaching legislation protecting the environment. In December 1989 (a mere six months after crushing pro-democracy protests in Tiananmen Square) China enacted a new Environmental Protection Law, which was quickly followed by additional laws focused on limiting air, water, and solid waste pollution (Xie 2020). The first officially-permitted environmental NGO in China, Friends of Nature (Ziran Zhi You), was established in 1994, working primarily on issues of biodiversity conservation and nature education rather than anti-pollution advocacy (Weller 2006: 128-29).

The Chinese state is notoriously fearful of *any* kind of independent national-scale organization or movement, environmental or otherwise. The primary focus of environmental organization and protest (as with other forms of protest), therefore, has always been local. *Ad hoc,* grass-roots organizations formed to address issues of industrial pollution and its effects on agriculture, food safety, water quality, and population health (Lora-Wainwright 2017; Mertha 2008; Yan 2014). Although China, like Taiwan, has large indigenous minority populations, indigenous peoples have not been allowed to organize for environmental causes, lest their organizations develop into movements for local autonomy. When national-scale environmentalism emerged after 1998, it was thus inevitably incorporated into the state's developmentalist system, and belongs to the next section of our overall history—the evolution of the eco-developmental state.

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

The Evolution of the Eco-Developmental State

Nowhere in East Asia did the state respond quickly to the environmental concerns brought up by direct action, journalistic exposés, and increasing public awareness. Instead, all of the states, attempting to continue their policies of promoting economic development through collaboration with industrial corporations and enterprises, initially reacted by trying to ignore and minimize the problems. The states claimed that pollution was a temporary sacrifice that populations would have to endure if people wanted to continue to raise their standards of consumption, and by studying environmental problems without doing anything concrete about them (Avenell 2012: 434-35).

Eventually, however, spurred on by a combination of mounting public pressure from growing environmental movements and realization that things were getting bad enough to harm further development, governments began to act to address environmental problems, reaching environmental tipping points. Japan, having been first to pollute, was also first to begin cleaning up, but it did not really begin until the late 1960s and early 1970s, initially at the local level and then only later at the national level. At that time, the Japanese developmental state began to become eco-developmental—passing anti-pollution laws, creating an environmental protection agency, and ruling in favor of pollution victims who had brought lawsuits in the courts (Avenell 2012: 435, Chapter 5; Wakamatsu et al. 2013). Within only a few decades, Japan went from being a "toxic archipelago" (Walker 2011) to one that enjoyed some of the cleanest air, water, and soil among advanced capitalist countries as the government implemented regulations and corporate actors saw the commercial value of cleaner, more efficient production processes and products (Schreurs 2002).

In spite of this dramatic improvement, Japan has not fully replaced its developmental goals and policies with environmental ones. The Japanese state still prioritizes economic growth, although it now takes environmental concerns into account when it considers how to support that growth. As a result, international and national NGOs, local citizen groups, environmental lawyers, and other activists continue to put pressure on the state and large corporations to live up to their environmental promises (Edahiro 2009).

In Korea, the Chun Doo-hwan regime (1980-88) actively worked to suppress the environmental movement. For example, in the face of the "Onsan disease" caused by heavy metal pollution in Gyeongsamnan-do, the government's environmental agency (falsely) announced that the disease was not caused by industrial pollution (Ku 2004: 196). After democratization, however, the state reaction to environmental concerns began to evolve. President Roh Tae-woo condemned the Doosan Electrical Materials company for spilling phenols into the Nakdong River in 1991. That same year local residents and national NGOs organized to block a proposed dam on the Donggang River, and won their fight on Environment Day when President Kim Dae-Jung announced that plans to build the dam had been scrapped. That same day he laid out "The New Millennium Vision for the Environment" in 2000 (ibid.: 199-201). Since that time Korea's state regulation has been successful in combating air pollution and partially successful in combating water pollution.

As in Korea, Taiwan's environmental movement played a key role in democratization itself (Weller 1999), and its political system rather quickly evolved into a "two-camp" structure with splinter parties forming coalitions with the two major parties—the reformed Nationalist Party leading the so-called "blue" camp and the Democratic Progressive Party leading the "green," both named for the colors of the

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

respective parties' flags and not for any affiliation with environmental movements. While Korea's environmentalists formed a powerful organization in the Korean Federation of Environmental Movements (KFEM) that usually supported the Democratic Party, in Taiwan environmentalists formed an independent Green Party. Taiwan's Green Party has never gained representation in the national legislature, but they have elected representatives to city and county councils and work with the Democratic Progressive Party to run and support candidates for national office. Through their partnership with the Democratic Progressive Party they have promoted such programs as "trash doesn't fall to the ground (*lese bu luo di*)" under then-Taipei mayor Chen Shui-bian (which was partly responsible for his successful bid for the presidency in the 2000 elections, ending fifty-plus years of Nationalist party rule). Significant air and water quality regulations were adopted during his mayoral and presidential tenures.

China has followed a similar trajectory to the others, but for very different reasons and with starkly contrasting outcomes. All through the transition from state socialism to bureaucratic capitalism in the 1980s and early 1990s, China's environmental degradation accelerated. Throughout this period, it continued to be impossible for any but the most local and spontaneous groups to engage in protest, let alone organize effectively in opposition. Thus, unlike the other three places, China has not seen any coordinated environmental or anti-nuclear movements emerge to play a serious role in politics. However, a transformation in state policy orientation did happen, beginning in the mid-1990s and galvanized by disastrous floods in the middle-Yangzi provinces in 1998 that killed more than 3,000 people, left 15 million homeless, and negatively affected more than 200 million people (UN 1998). After researching the cause of the floods, state scientists (wrongly perhaps: see Henck et al. 2011) attributed much of the damage to upstream deforestation caused by the logging booms of the late 1950s, 1970s and 1980s. The state at this point did an about face, and began to take environmental regulation seriously. The State Environmental Protection Administration (later elevated to ministry status) began aggressive campaigns to stop deforestation, followed after a few years by policies emphasizing de-carbonization of the nation's energy mix, as well as attempts to address excessive water use for irrigation (which had caused the Yellow River, for example, to run dry before it reached the ocean in the winter during the 1990s), and measures to clean up some of the world's worst urban air pollution. But much of China's recent push to green its coal-based energy sector though efficiency and renewables has been driven by green industrial policy, in line with overarching economic development and reform goals (Lewis 2013).

Unlike the eco-developmental states in Japan, Korea, and Taiwan, however, there has been little coordination between any central-level state agencies and national environmental groups, because there are no powerful national environmental groups. Formally organized local groups do exist from time to time, and local protests continue to be very common (Mertha 2009; Lora-Wainwright 2017). Local state agencies are often eager to compromise and to pay compensation to victims of pollution or occasionally to shut down the most egregious polluters, in fear of retribution from higher-level state agencies.

At the national level, a small number of the largest and most professional global NGOs such as The Nature Conservancy (n.d.) and the Natural Resources Defense Council (2016) have been able to work with the Chinese government to promote better environmental policies. But unlike the other countries, China has not seen an uneasy swaying between opposition and collaboration of state branches and environmental organizations, except in the area

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

of species conservation. Instead, environmental mitigation in China has been largely state-led, using methods ranging from legislation to broad policy initiatives, including the state's proclamation that China is an "ecological civilization" (*shengtai wenming*) (Schmitt 2016). Not all of these efforts have achieved immediate success—river and lake eutrophication, for example, are still huge problems (Fu 2020), but the campaign against air pollution triggered by the extreme events of the early 2010s has been a notable success—sulfur dioxide has been eliminated as a major pollutant (Li et al. 2020; MEE n.d.), and ultra-small particulate pollution has been reduced by more than half in almost all cities (MEE n.d.).[5] Renewable energy expansion is well ahead of targets set only a few years ago (Sönnichsen 2020), and forest cover continues to expand (State Forestry 2019).

In general, the public and environmental groups have only been able to exercise influence when they work through the channels already provided by the state, which tends to reinforce the legitimacy and authority of the central government while directing the criticism to local authorities (Haddad 2015c; Teets 2018). Widespread unrest has largely taken a virtual form—videos like Chai Jing's "Under the Dome" (Chai 2015), WeChat and Weibo discussions, and crowd-sourced reporting (Tyson and Logan 2016) of environmental pollution. Citizens critical of the government response to environmental problems have not been allowed to form organizations to express that unhappiness—Chinese citizens can sometimes express discontent as individuals, but if they want to organize, they must form groups that work with, not against, the government.

Since China's transformation to an eco-developmental state is only about a decade old, we have not yet seen the kind of dramatic improvements in air, water, and soil quality that Japan, Korea, and Taiwan have enjoyed. In general, the environmental situation in China remains in "crisis" mode. That said, we note considerable progress in some areas (e.g., reduction in SO2 and PM2.5 emissions, increase in forest cover) even as the overall situation remains dire.

While the overall story of the environmental cleanup made possible by the transition from a developmental to an eco-developmental state may be significant, we must emphasize that in no case has the state become a fully environmental state committed to sustainability at the expense of growth. The eco-developmental state views green technology as an important industry for continued economic growth and is concerned about the costs and risks related to climate change and pollution clean-up. In other words, the developmental state's shift in perspective is not from one that was pro-economic growth to one that is pro-environment. Rather, the eco-developmental state now recognizes that many pro-environmental policies are also beneficial for the economy, and that sustainable economic growth requires more sustainable environmental policies and practices. Because the eco-developmental state is still very strongly pro-growth, all of these states continue to face both environmental challenges and significant, even growing pressure from their citizens to respond to those challenges.

Overall, the observed pattern of evolution from developmental to eco-developmental state is based on three main factors: industry support, state capacity, and party incentive.

1. Industry support. In many cases, pro-environmental policy has the potential to generate economic growth and job creation (e.g., renewable energy industries or increased energy efficiency), and in fact the success of these industries and initiatives has very much been driven by "green' industrial policy. In other cases, there are real

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

tradeoffs to be made between environmental protection and direct economic gain (e.g., land conservation or pollution control equipment), and in these areas state support has remained lukewarm.
2. State capacity. In industries and issues where the industry is fairly consolidated and/or the state has a lot of influence, it has been a lot easier to shift policies (e.g., energy, forestry). In industries and issues where the sources of pollution are more diffuse (e.g., car emissions) or the industry is more fragmented (e.g., farming), it has been a lot harder for the state to convince industry to change behavior.
3. Party incentive. If the issues are negatively affecting an important political constituency, then the ruling party will deal with the issue in order to maintain political legitimacy/support. If the issues are not very visible or affect politically marginalized communities, then the ruling party will be much less likely to deal with the issue.

When these three factors combine, we can observe a wholesale shift away from a growth-at-any-cost policy towards one that regularly includes environmental concerns. Indeed, in some policy areas where these three factors coalesce, we see East Asian countries become global leaders, such as low emission and hybrid vehicles in Japan and solar energy in China. In contrast, in areas where we only see a few of these factors coming together (e.g., biodiversity), we see much less inclusion of environmental concerns into state policy.

Thus, the governments of East Asia have remained developmental states even as they incorporate ecological concern within their priorities. They continue to base their legitimacy on their ability to bring material prosperity to their people. They continue to work closely with industry to coordinate efforts to bring about economic development. In the spheres where the state can work with industry to promote green growth policies, where efficiency and conservation can cut production costs, when short term environmental investments can reap long-term economic gains, we see tremendous progress towards a model of sustainable development. In other areas, where it is more difficult for industry and/or government to collaborate for a policy that is good for the bottom line as well as good for the planet, when people, plants, and animals can only win when industry loses, we continue to see activists across the region seeking to pressure corporations and governments to make more ecologically positive choices. They frequently lose those fights, but they keep fighting.

References

Almeida, Paul, and Linda Brewster Stearns. 1998. “Political Opportunities and Local Grassroots Environmental Movements: The Case of Minamata.” *Social Problems* 45 (1): 47-60.

Avenell, Simon. 2012. “Japan’s Long Environmental Sixties and the Birth of a Green Leviathan.” *Japanese Studies* 32 (3): 423-44.

Avenell, Simon. 2013. “The Borderless Archipelago: Toward a Transnational History of Japanese Environmentalism.” *Environment and History* 19: 397-425.

Bebbington, Anthony. 2000. “Reencountering Development: Livelihood Transactions and Place Transformations in the Andes.” *Annals of the Association of American Geographers.* 90, 3: 495-520.

Beeson, Mark. 2004. “The Rise and Fall (?) of the Developmental State: The Vicissitudes and Implications of East Asian

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

Interventionism." Western Australia University

Blaikie, Piers. 2000. "Development, Post-, Anti-, and Populist: A Critical Review." *Environment and Planning A*, 32, 6: 1033-1050.

Boden, T.A., Marland, G., and Andres, R.J. 2017. National CO2 Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2014, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, doi 10.3334/CDIAC/00001_V2017.

Cao, Ling, Yong Chen, Shuanglin Dong, Arthur Hanson, Bo Huang, Duncan Leadbitter, David C. Little, Ellen K. Pikitch, Yongsong Qiu, Yvonne Sadovy de Mitcheson, Ussif Rashid Sumaila, Meryl Williams, Guifang Xue, Yimin Ye, Wenbo Zhang, Yingqi Zhou, Ping Zhuang, and Rosamond L. Naylor. 2017. Opportunity for Marine Fisheries Reform in China. *PNAS* 114, 3: 435-42.

Chai Jing. 2015. 穹顶之下 (Under the Dome). Documentary film.

Chao, Lucy. 2017. Green Energy, Green Economy Avert Decline. *CommonWealth* (Taiwan)

Chiu, Dominic. 2017. "The East Is Green: China's Global Leadership in Renewable Energy." CSIS Report. https://csis-website-prod.s3.amazonaws.com/s3fs-public/171011_chiu_china_Solar.pdf?i70f0uep_pGOS3iWhvwUlBNigJMcYJvX

Cho, Hong Sik. 1999. An Overview of Korean Environmental Law. *Environmental Law* 29, 3: 501-514.

Choi, Yoo-sung, and Deil S. Wright. 2004. Intergovernmental Relation (IGR) In Korea and Japan: Phases, Patterns, and Progress Toward Decentralization (Local Autonomy) in A Trans-Pacific Context. *International Review of Public Administration* 9, 1: 1-22.

Dalton, Russell J., Steve Recchia, and Robert Rohrschneider. 2003. The Environmental Movement and the Modes of Political Action. *Comparative Political Studies*, 36: 743-71.

Deep Sea Conservation Coalition. n.d. Korean Federation for Environmental Movement (KFEM).

Delman, Jorgen. 2018. Ecological civilization Politics and Governance in Hangzhou: New pathways to green urban development? *Asia Pacific Journal* 16 (17,1)

Economy, Elizabeth. 2004. Environmental Enforcement in China. In Kristen A. Day, ed., *China's Environment and the Challenge of Sustainable Deveopment,* pp. 102-120. Armonk, NY: M.E. Sharpe.

Edahiro, Junko. 2009. A Brief History of the Environmental Movement in Japan. *Japan for Sustainability Newsletter* 82, 83.

Enerdata.

EPA (United States Environmental Protection Administration). 2018.

Escobar, Arturo. 1999. The Invention of Development. *Current History* 98 (631): 381-86.

Executive Yuan, Republic of China (Taiwan). 2018. New Measures Aimed at Boosting International Tourism in Taiwan. 20 April.

Falcus, Max, and Maggie Hiufu Wong. 2019. Beijing is Building Hundreds of Airports as Millions of Chinese Take to the Skies. CNN travel, 25 May. https://www.cnn.com/travel/article/china-new-airports/index.html

Fedman, David. 2018. Wartime Forestry and the "Low Temperature Lifestyle" in Late

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

Colonial Korea, 1937-1945. *Journal of Asian Studies* 77 (2): 333-350.

Fu, Jianru. 2020. China's Sewage Treatment Industry Status Quo and Improvement Measures. IOP Conference Series: Earth and Environmental Sciences 514: 030264, 6 pp. Accessed December 2020.

Garcia, Cathy Rose A. 2017. Beyond Hallyu: How Korea Plans to Attract More Tourists. *Business World*. December 8.

Gold, Thomas B. 1986. *State and Society in the Taiwan Miracle*. Armonk, N.Y.: M.E. Sharpe.

Grano, Simona A. 2015. *Environmental Governance in Taiwan: A New Generation of Activists and Stakeholders*. New York: Routledge.

Greenpeace. 2018. Analysis of Air Quality Trends in 2017.

Gu, Hallie, and Naveen Thukral. 2018. Soy Source: Brazil's Share of Soybean Exports to China Hits Record. Reuters, 25 January:

Haddad, Mary Alice. 2015a. From Backyard Environmental Advocacy to National Democratisation: The Cases of South Korea and Taiwan. in Carol Hager and Mary Alice Haddad, eds, *NIMBY is Beautiful: Cases of Local Activism and Environmental Innovation around the World*. New York: Berghahn Books).

_____. 2015b. 'Paradoxes of Democratization: Environmental Politics in East Asia.' in Paul G. Harris and Graeme Lang (eds.), *Routledge Handbook of East Asia and the Environment* (Routledge: New York).

_____. 2015c. Increasing Environmental Performance in a Context of Low Governmental Enforcement: Evidence from China, *Journal of Environment and Development* 24: 3-25.

Hager, Carol, and Mary Alice Haddad, eds. 2015. *NIMBY is Beautiful: Cases of Local Activism and Environmental Innovation Around the World*. New York: Berghahn Books.

Haggard, Stephan, and Chung In Moon. 1997. The State, Politics, and Economic Development in Post-War South Korea, in Hagen Koo, ed., *State and Society in Contemporary Korea*. Ithaca: Cornell University Press, pp. 51-94.

Hatch, Walter, and Kozo Yamamura. 1996. *Asia in Japan's Embrace: Building a Regional Production Alliance* New York: Cambridge University Press.

Henck, Amanda C., Katharine W. Huntington, John O. Stone, David R. Montgomery, and Bernard Hallet. 2011. Spatial Controls on Erosion in the Three Rivers Region, Southeastern Tibet and Southwestern China. *Earth and Planetary Science Letters* 303 (1): 71-83.

Ho, Ming-Sho. 2011. Environmental Movement in Democratizing Taiwan (1980-2004): A Political Opportunity Structure Perspective. In Jeffrey Broadbent and Vickie Brockman, eds, *East Asian Social Movements*. New York: Springer. pp. 283-314.

Ho, Samuel P.S. 1975. The Economic Development of Colonial Taiwan: Evidence and Interpretation. *Journal of Asian Studies* 34 (2): 417-39.

Hu, Wen-cheng, Shih-ming Chung, Jui-chu Lin, Chien-te Fan, and Chen-An Lien. 2017. An Accelerating Green Growth for Taiwan's Climate Ambition. *Renewable and Sustainable Energy Reviews* 79: 286-292.

IEA (International Energy Agency). 2020. Global EV Outlook 2020.

Japan Times. 2016. Japan's Government Aims to Help Local Airports Attract Foreign Visitors. 21 December.

Johnson, Chalmers. 1982. *MITI and the*

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

Japanese Miracle. Stanford: Stanford University Press.

Johnson, Chalmers. 1986. The Nonsocialist NICs: East Asia. *International Organization* 40 (2): 557-65.

J.P. 2018. How China Cut its Air Pollution. *The Economist, 25 January https://www.economist.com/the-economist-explains/2018/01/25/how-china-cut-its-air-pollution*

Kim, Su Min. 2014. Shunning the Authority: Symbolic Purity and Autonomy in Consuming Non-Certified Organic Foods in Chengdu, China., Honors Thesis, University of Washington.

King, Betty L. 1975. Japanese Colonialism and Korean Economic Development, 1910-1945. *Asian Studies: Journal of Critical Perspectives on Asia* 13 (3): 1-15.

Ku, Do-Wan. 1996. The Structural Change of the Korean Environmental Movement. *Korea Journal of Population and Development* 25: 155-80.

Ku Do-Wan. 2004. The Korean Environmental Movement: Green Politics through Social Movement. *Korea Journal,* Autumn: 185-219.

Ku, Duwan. 2002. Environmental Movement and Policies During High Economic Growth in Korea. in Yuko Arayama, ed., *Environment and Our Sustainability in the 21st Century: Understanding and Cooperation between Developed and Developing Countries* Nagoya: Nagoya University.

Lee Chien-liang. 2010. 環境公民訴訟新典範─簡析台北高等行政法院九八年度訴字第五〇四號判決. *Huanjing gongmin susong xin dianfan: Jianxi taibei gaodeng xingzheng fayuan 98 niandu suzi di 504 hao panjue* (The New Paradigm of Environmental Citizen Lawsuits: Analysis of Taipei High Administrative Court Decision 98-Su-504]. *Taiwan Law Journal* 152: 57-67.

Lee, See-Jae. 2000. The Environmental Movement and Its Political Empowerment. *Korea Journal* 40: 131-60.

Lee, Su-Hoon, Hsin-Huang Michael Hsiao, Hwa-Jen Liu, On-Kwok Lai, Francisco A. Magno, and Alvin Y. So. 1999. The Impact of Democratization on Environmental Movements. in Yok-shiu F. Lee and Alvin Y. So, eds., *Asia's Environmental Movements*. Armonk, NY: M.E. Sharpe.

Lewis, Joanna I. 2013. *Green Innovation in China: China's Wind Power Industry and the Global Transition to a Low-Carbon Economy.* New York: Columbia University Press.

Li, Nan, Ding Ma, and Wenying Chen. 2017. Quantifying the Impacts of Decarbonization in China's Cement Sector: A Perspective from an Integrated Assessment Approach. *Applied Energy* 185: 1840-1848

Li, Pei, Yi Lu, and Jin Wang. 2020. The Effects of Fuel Standards on Air Pollution: Evidence from China. *Journal of Development Economics* 146, 19 pages.

Litzinger, Ralph A. 2004. The Mobilization of "Nature": Perspectives from Northwest Yunnan. *China Quarterly* 178: 488-504.

Looney, Kristen Elizabeth. 2012. The Rural Developmental State: Modernization Campaigns and Peasant Politics in China, Taiwan, and South Korea. Ph.D. dissertation, Department of Government, Harvard University.

Lora-Wainwright, Anna. 2017. *Resigned Activism: Living with Pollution in Rural China.* Cambridge, MA: M.I.T. Press.

Lyons, David. 2009. The Two-headed Dragon: Environmental Policy and Progress Under Rising Democracy in Taiwan. *East Asia* 26: 57-76.

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

Manufacturing Institute 2013 The US is Losing Export Market Share.

MAREX (Maritime-Executive). 2018. China Surpasses U.S. as Largest Crude Oil Importer.

Mertha, Andrew C. 2008. *China's Water Warriors: Citizen Action and Policy Change.* Ithaca, N.Y.: Cornell University Press.

Ministry of Ecology and Environment (People's Republic of China). n.d. PM2.5 历史数据, (Historical Statistics of PM2.5). Accessed January 2021.

Moseley, Robert K, and Renée B. Mullin. 2014. The Nature Conservancy in Shangrila: Transnational Conservation and its Critiques. In Emily T. Yeh and Chris Coggins, eds., *Mapping Shangrila* (Seattle: University of Washington Press), pp. 129-152.

Natural Resources Defense Council. 2016. The China Coal Consumption Cap Plan and Research Project.

Naughton, Barry. 2015. The Transformation of the State Sector: SASAC, The Market Economy, and the New National Champions. In Barry Naughton and Kellee S. Tsai, eds., *State Capitalism, Institutional Adaptation, and the Chinese Miracle*, pp. 46-71. Cambridge, UK: Cambridge University Press.

OICA (International Organization of Motor Vehicle Manufacturers). n.d. World Motor Vehicle Production by Country and Type, 2017-2018.

Perry, Elizabeth J. 2008. Chinese Conceptions of "Rights": From Mencius to Mao—and Now. *Perspectives on Politics* 6, 1: 37-50.

_____, and Stevan Harrell. 1983. Syncretic Sects in Chinese History: A Symposium. *Modern China* 8 (3-4).

Rapoza, Kenneth. 2015. Are Chinese Investments in Argentina Destroying the Environment? *Forbes,* 30 May.

Reardon-Anderson, James. 1997. *Pollution, Politics, and Foreign Investment in Taiwan: The Lukang Rebellion* New York: M.E. Sharpe.

Reuters. 2018. China Coal Imports Highest Since 2014—Customs.

Sachs, Jeffrey. 2017. "Japan's Leadership and Inspiration in Sustainable Development."

Schmitt, Edwin A. 2016. The Atmosphere of an Ecological Civilization: A Study of Ideology, Perception, and Action in Chengdu. China. Ph.D. dissertation, Chinese University of Hong Kong.

Shapiro, Judith. 2001. *Mao's War Against Nature: Politics and the Environment in Revolutionary China.* Cambridge, UK: Cambridge University Press.

Smil, Václav. 1993. *China's Environmental Crisis. An Inquiry into the Limits of National Development.* Armonk, N.Y.: M. E. Sharpe.

Songster, E. Elena. 2018. *Panda Nation: The Construction and Conservation of China's Modern Icon,* New York: Oxford University Press.

Sönnichsen, N. 2020. Primary Energy Consumption in China in 2018 and 2019, by Fuel Type. *Statista,* Nov. 3. h Accessed January 2021.

State Forestry and Grassland Office (People's Republic of China). 2019. Zhongguo senlin fugai lü 22.96% 中国森林覆盖率22.96% (China's forest cover 22.96%). www.forestry.gov.cn/main/65/20190620/103419043834596.html. Accessed January 2021.

Statistics Times. 2020. Projected GDP ranking.

Suh, Chung-Sok, and Seung-Ho Kwon. 2014. Withere the Developmental State in South

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

Korea? Balancing Welfare and Neoliberalism. *Asian Studies Review* 38 (4): 676-692.

Takeuchi, K., R.D. Brown, I. Washitani, A. Tsunekawa, M. Yokohari eds. *Satoyama: The Traditional Rural Landscapes of Japan* (Springer, 2002).

Tam, Vivian W.Y. 2009. Comparing the Implementation of Concrete Recycling in the Australian and Japanese Construction Industries. *Journal of Cleaner Production* 17, 7: 688-702.

Terao, Tadayoshi, and Kenji Otsuka, eds. 2007. *Development of Environmental Policy in Japan and Asian Countries* New York: Palgrave Macmillan and IDE-JETRO.

Teets, Jessica. 2014. *Civil Society Under Authoritarianism: The China Model*. Cambridge,UK: Cambridge University Press.

_____. 2018. The Power of Policy Networks in Authoritarian Regimes: Changing Environmental Policy in China. *Governance* 31, 1: 125-131.

The Nature Conservancy. n.d. The Land Trust Reserve: A New Model of Nature Conservation in China.

Thomas, Asha E. 2013. Impact of Tourism on Environment: Responding to Global Challenges. *Pauline Journal of Research and Studies.* 1, 1: 169-182.

Toyota. 2018. Toyota sells 1.52 million electrified vehicles in 2017, three years ahead of 2020 target.

Tu, Wei-Ming. 1989. *Centrality and Commonality: An Essay on Confucian Religiousness* Albany, NY: State University of New York Press.

Tyers, Roger. 2017. It's Time to Wake Up to the Devastating Impact Flying Has on the Environment. *The Conversation*.

Tyson, Elizabeth, and Kate Logan. 2016. Tracking China's "Filthy Rivers" with Citizen Science. *New Security Beat.*

UN Environment Programme. 1972. Declaration of the United Nations Conference on the Human Environment.

UN Economic and Social Commission for Asia and the Pacific. n.d. A Paradigm Shift for Economic Growth: Republic of Korea's National Strategy for Green Growth and Five-Year Plan

UN Office for the Coordination of Humanitarian Affairs. 1998. Final Report on 1998 Floods in the People's Republic of China.

Upham, Frank K. 2009. *Law and Social Change in Postwar Japan.* Cambridge, MA: Harvard University Press.

Wakamatsu, Shinji, Tazuko Morikawa, and Akiyoshi Ito. Air Pollution Trends in Japan between 1970 and 2012 and Impact of Urban Air Pollution Countermeasures. *Asian Journal of Atmospheric Environment* 7 (4): 177-190.

Weller, Robert P. 1999. *Alternate Civilities: Democracy and Culture in China and Taiwan.* Boulder: Westview Press.

Weller, Robert P. 2006. *Discovering Nature: Globalization and Environmental Culture in China and Taiwan.,* Cambridge, UK: Cambridge University Press.

Whitney, J. B. R. 1973. Ecology and Environmental Control. In Michel Oksenberg, ed., *China's Developmental Experience.* New York: Praeger.

WHO (World Health Organization) 2018. Global Health Observatory (GHO) Data: Exposure to Ambient Air Pollution.

Wilkening, Kenneth E. 2004. *Acid Rain Science and Politics in Japan.* Cambridge, MA: MIT Press.

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

World Bank. n.d. GDP.

World Bank. 2019a. International Tourism, Number of Arrivals.

World Bank, 2019b. Air Transport, Passengers Carried.

World Nuclear Association. 2019. Nuclear Power in Japan (Updated February 2019).

World Nuclear News. 2017. Korea's Nuclear Phase-out Policy Takes Shape.

World Steel Association. 2018. World Steel in Figures 2018.

World Steel Association. 2019. World Crude Steel Production – Summary, 25 January 2019.

Workman, Daniel. 2019. Car Exports by Country. WTEX (World's Top Exports).

Xie, Zhenhua. 2020. China's historical evolution of environmental protection along with the forty years' reform and opening-up. *Environmental Science and Ecotechnology*. January 2020.

Yan Dingfei. 2014. Shifang Deadlock is a "National Problem" for China. *China Dialogue,* November 10. Accessed January 2021. [Originally published in 南方周末*Southern Weekend*]

Yoshida, Fumikazu, Akio Hata, and Haruo Tonegawa. 1999. Itai-itai disease and the countermeasures against cadmium pollution by the Kamioka Mine. *Environmental Economics and Policy Studies* 1999 (2): 215-229.

Stevan Harrell retired in 2017 after 43 years teaching anthropology, China Studies, and Environmental Studies at the University of Washington in Seattle. His field research has been in northern Taiwan and in the Liangshan region of Sichuan. He is finishing a book manuscript tentatively entitled *Intensification and its Discontents: An Ecological History of the People's Republic of China.* He lives in Bellingham, Washington.

Mary Alice Haddad is the John E. Andrus Professor of Government, Chair and Professor of East Asian Studies and Professor of Environmental Studies at Wesleyan University. Her research concerns civil society, environmental politics, and urban studies in East Asia. Her most recent books include *Effective Advocacy: Lessons from East Asia's Environmentalists* (2021) and *Building Democracy in Japan* (2012).

Notes

[1] This article is based on the introductory chapter to Ashley Esarey, Mary Alice Haddad, Joanna Lewis, and Stevan Harrell eds., *Greening East Asia: The Rise of the Eco-Developmental State* (University of Washington Press, 2020). We urge all readers who are interested in the subjects raised here to read the book, which contains 15 chapters related to policy and law, local action, and environmental NGOs and coalitions.
[2] We take no position on the status of Taiwan in international law. We treat it as a separate country because: 1) it has its own government, political and judicial system, enforced borders,

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press

armed forces, and currency, and 2) its trajectory of development and environment has been unique, different from China, Japan, and South Korea.

[3] GDP percentages vary depending on the method of calculation, from about 23.9% (PPP) to about 25.7% (nominal). Because of the disruptions of the COVID-19 pandemic, we use 2019 rather than 2020 figures.

[4] China produces more motor vehicles than Japan and Korea put together, but almost all of these are used domestically

[5] Based on a study by one of the authors using daily statistics from 2013 through 2020 provided by the Ministry of Ecology and Environment, which can be found at n.d. b. , PM2.5 历史数据, (Historical Statistics of PM2.5).

https://doi.org/10.1017/S155746602103093X Published online by Cambridge University Press