Chapter 2: Exclusion: Comparative History of environmental states in Japan and Thailand

An environmental state often evolves from government intervention in natural resource management. In these cases, government intervention is the catalyst for the process of becoming an environmental state. This chapter details how this government intervention developed in Japan and Siam (modern-day Thailand), two Asian countries that modernized without experience of direct colonization. We explore how the process of integrating peripheral natural resources into a centralized economy shaped and solidified the interactions between the state and society. Governments in Japan and Siam adopted very different approaches for interacting with the local people living within proximity of the natural resources. These diverging methods affected the evolution of the environmental state in these countries, both in unexpected ways.

# 2.1 The dawn of the environmental state

Once abundant forests disappear, it is the people who suffer unexpected consequences. Nowhere is this clearer than in Japan, where a constant stream of news on disastrous events––frequent landslides, animal control problems, pollen allergies––can be traced back to mismanagement of the nation’s forests. Once such problems arise, they are difficult to rectify, as ravaged forests take generations to heal. We have to coexist with the woodlands that remain, while also striving to create new forests for the future. And forests are not the only challenge. As was discussed in the previous chapter, when a region attracts infrastructure in order to access its resources, that development leads to a cycle of investment and population growth that affects the future of the land.

Past development has repercussions for the future. But when does an investigation into the past become a wasted effort? The further we retreat in time, the harder it becomes to draw a clear line from past to current events. Take historian Conrad Totman’s monumental history of Japanese forests, *The Green Archipelago: Forestry in Preindustrial Japan* (Totman 1998).

Totman observed how these once-depleted forests, revitalized through careful planning and meticulous management by the shogunate authorities, showed remarkable recovery by the middle of the Edo period (1603 to 1868). However, the world during the Edo period was not nearly as globalized as it is today. Any lessons from that faraway age may well be irrelevant today, especially for the developing countries for which this book aims to be of use.

The latter half of the nineteenth century is a more appropriate starting point for investigating the history of resource management in Asia, since that is when nation states began intense engagement with natural resources. This is also the period when many East Asian countries embarked on a campaign of nation building and state-led modernization. It was the beginning of globalization, as systems and technologies originating in Western Europe were introduced in many countries. Countries scaled up their resource development and production systems to an unprecedented level, and nations established policies to carry them into the modern age.

This chapter compares late-nineteenth-century Japan and Thailand (known as Siam until 1939). The reasons for choosing these countries will become clear shortly. Before we launch into the substance of this chapter, it should be emphasized that historical comparisons need to be made with careful reflection about their purpose because most structures created during the industrial modernization era no longer exist in their original forms. Thus, pinpointing the pivotal moments in rapidly changing circumstances is a challenging task.

The point of this analysis is to determine the local residents’ involvement––their degree of inclusion or exclusion–– in the process of states developing their natural resources. Why? The inversion described here are closely linked to various forms of exclusion, such as forceful removal of people away from the resources near their homes and the imposed burdens of various obligations on them. We cannot understand these mechanisms, and the inversion that followed, without being aware of how and why patterns of exclusion originated in the first instance.

# 2.2 What we can learn from a comparison of Japan and Siam

In the middle of the nineteenth century, Japan and Siam launched state-led programs for rapid modernization almost simultaneously. Both countries wanted to move as fast as possible to counter the ever-present threat of colonization by Western powers.

Japan and Siam were in remarkably similar political situations. First, their modernization efforts extended far beyond the mere adoption of modern technology from Western Europe: both countries also sought to curtail the power of regional rulers by establishing a centralized state. Second, both succeeded in modernizing their systems of governance, which saved them from direct colonization. Both countries considered the mining and forestry industries as keys to modernization, meaning that these two sectors played a central role in how state-society relations developed. Third, both nations opened their borders to world trade to promote rapid modernization and were willing to hire foreign advisors to operate at the heart of their governments.

Even in the earliest days, both countries were dedicated to total governance of their natural resources, which required an overturning of their (relatively similar) decentralized political structures and rigid class-based systems. Vigorously pursuing policies to bring natural resources under control of the centralized state, they quickly created government departments to oversee resource management. Their motivations, however, were at times different. Why, in early stages of their modernization drive, did Japan and Siam place such emphasis on state control of natural resources? This is the question examined in this chapter.

This early attention on natural resources is all the more interesting because in the mid-nineteenth century, mines and forests contributed only marginal tax income. The economic history of Southeast Asia has shown that colonial governance of the kind Japan and Siam emulated was strongly motivated by revenue procurement. At the start of the Meiji period around 1868, land and alcohol taxes accounted for almost 80 percent of Japan’s total tax revenue. In Siam, commercial services and royalties from tin mining and forestry brought in only about 5% of tax revenue (Ingram 1971). During the reign of King Rama II (1809-1824), tin was the major mineral product but accounted for less than 0.2% of Siam’s annual revenue. During the Rama IV era (1851-1868), combined income from tin, iron, and teak made up barely 0.7% of annual revenue (Wales 1934). The accuracy of these numbers can be disputed, yet it can still be said with confidence that non-agricultural resources contributed to only a small proportion of government income. This suggests that the government’s objective in seeking centralized control over these resources could not have been purely financial.

It should be noted at this point that conditions in Japan and Siam were different in many ways, making straightforward comparisons tricky. For one, Japan was an isolated and historically sheltered island nation, while Siam shared land borders with neighboring countries that had already fallen under colonial rule. Also, population density in Siam was much lower than in Japan, so the pressure on land and resource use was also less acute. Moreover, at the start of the modernization drive, Japan already had higher living standards and a more developed social infrastructure. Furthermore, most Japanese citizens were literate. The requirement of the Edo-era shogunate that regional rulers set up households in the capital, Tokyo, and travel there brought about a well-developed communications system and an extensive road network. By contrast, the Siamese royal family’s knowledge of the country’s frontier towns was limited and their contact with peripheral peoples infrequent (Bunnag 1977). In short, Japan had some significant advantages over Siam in the move toward centralization and expanded governance of the periphery.

The starting points for Japan and Siam were each unique but both aimed for similar goals. Both countries hoped to shift from decentralized governance, with regional rulers controlling the periphery, to a political system in which the central government had control over all national territory. This process proved chaotic for both Japan and Siam in their attempts to extend central governance to the rich natural resources, and the people, in the remote regions.

After this nation-building goal was accomplished, both countries, however, veered towards starkly different paths. Japan achieved remarkable economic growth and soon had to contend with the harmful effects of large-scale industrial pollution. This hastened the creation of an environmental state, one that promoted relatively inclusive policies which allowed considerable leeway to both local people and private businesses. Siam, changing its name to Thailand, took a much more forceful and exclusionary approach towards the local people.

Taking a closer look at how these countries transitioned from one political system to another in the nineteenth century, I examine the reasons for these different approaches. In doing so, I hope to identify critical junctures, or historical triggers of inversion in Japan and Thailand.

# 2.3 Centralization in Japan: the story of unavoidable inclusion

## The impact of land tax reform in Meiji Japan

There are two factors about Japan which need to be kept in mind in our analysis. First, Japan’s high population-to-land ratio has always been a decisive factor in how the country could be governed. Second, its regional rulers showed great interest in managing the natural resources in their domains. Long before the Meiji reformers centralized political power in the mid-nineteenth century, feudal clans had regulated the use of forests, water, minerals, and other local resources. Tax revenue and labor came mostly from farmers, who had a legal obligation to cultivate particular plots of land and faced restrictions on their mobility. The Meiji Restoration marked the end of this rigid feudal system, profoundly transforming how people interacted with each other in terms of resource control.

For our purposes, the 1873 land tax reform was one of the most important, fundamental changes imposed by the Meiji government. It was a sweeping attempt to transform governance from a highly decentralized, provincial rule-based structure into a system based on contracts between the state and individual landowners. But the land tax reform went further than that. It also replaced Japan’s old in-kind tax, which was paid mostly in rice, with a 3 percent monetary tax on anticipated profits from the land. Landowners received new land certificates which demarcated each plot’s location, owner, and estimated monetary value. This made it possible to sell the land, which had been forbidden until then. The land tax reform was truly groundbreaking in that it enabled the Japanese government to create a fairer taxation system. Tax burdens, which prior to the reform had fallen on the farmers, could now be targeted to urban residents and the owners of forest plots as well.

Although farmland was the principal focus of the new land tax reform, the Meiji government also expropriated major mines all around country, as these resources were considered essential to the modernization of Japan. Regional mines and industrial facilities indispensable for the production of weapons and ships, for example, were confiscated and placed under the authority of the Ministry of Public Works. Gold, silver, and copper were particularly valued as they formed the foundation of the new government’s finances and were crucial to the creation of a nation-wide currency system (Ministry of Trade and Industry 1966). Copper and coal could be exported for foreign currency, making them important at a time when Japan still relied on imports for all its modern machinery and equipment.

One overlooked aspect of the land tax reform was its impact on forests. As mentioned, earlier, woodlands’ contribution to the tax revenue was only marginal. But forests were everywhere, covering about 70 percent of Japan’s territory, and most arable land was adjacent to the forests. Thus, it was clear that the Meiji government’s forest management incursions would impact on the farmers in two important ways.

First, forest undergrowth was a primary source of fertilizer. For a farmer to fertilize his crops adequately from this source, he needed a woodland area roughly ten times the size of his fields (Takayanagi 2017). Therefore, he could not afford to have his access restricted. Any change in forest management policy could easily turn into existential crises for entire farming communities.

Second, the reform sought to differentiate between state-owned assets and privately owned land. Wooded areas produce different materials and are subject to preexisting local customs, but the top-down reform left sizable areas, many of them forested, in legal limbo. The uncertainty created endless conflict between the state and farmers who demanded access to “ambiguous lands,” much of which traditionally fell under the common lands (*iriai*) managed by the locals. Unlike agricultural fields, which had relatively well-defined boundaries making it easy to determine ownership, it was much harder to establish a straightforward system of individual property ownership for forests.

As stated above, most forest areas next to fields had been managed communally by villagers as common property (*iriairin*). Many wooded areas were considered shared resources which granted entry to the farmers. To collect materials needed for agriculture and daily life, villagers had access to these at communally agreed times, collecting specified amounts with approved tools. The *iriairin* system both ensured that farmers were able to have the necessary resources (Ōta 2012) and protected the forests from overexploitation. These areas were very difficult to incorporate into the new strict division between state-owned and privately owned land.

Only a few private woodlands owners objected to the government’s nationalization plans. Most forests had little commercial potential and were not considered a favorable long-term investment to begin with. Japan’s borders had been closed to foreign trade for many centuries, and its market for forest products was underdeveloped. Most citizens were not even aware that individual ownership of forests was possible, and thus the state’s forest policy met with little opposition, particularly in comparison to its other land control efforts (Fukushima 1970).

However, the state’s policy of centralizing management of all woodlands of undetermined ownership quickly changed. When the Meiji government realized that it lacked the resources to properly manage the country’s large new tracks of state forests, it decided to hand over and sell these to the private sector. The state had two goals in auctioning off what it considered unproductive wastelands: to procure revenue quickly, and to expand its future tax base by encouraging the new landowners to make the land productive.

This approach, as a consequence, deepened economic inequality in the rural areas. It also sharpened conflicts over resources and encouraged overexploitation, ravaging the forests. In 1879, when the communal lands were seized by the state, about 99,000 Japanese farmers lost access to their most basic resources. By 1888, the number of affected farmers was 1.8 million. Some of these people subsequently turned to arson and illegal tree cutting (Resource Council 1960). The only real beneficiaries of the sale of woodlands were wealthy landowners. Increasing farmer riots and uprisings finally forced the government to renounce its privatization policy.

## Rural resistance and the Forestry Bureau

After the spiraling unrest and rapid depletion of forest resources, the state began efforts to reassert central control. In 1879, it created the Forestry Bureau within the Home Ministry. Together with the Ministry of Economic Affairs, the Home Ministry established measures for governance at home and promotion of industrialization, a key policy goal of the Meiji government.

A pivotal figure in establishing the Forestry Bureau was statesman Toshimichi Ōkubo (1830-1878), who was also one of the main champions of the Meiji Restoration. Ōkubo prioritized domestic stabilization over the pursuit of international interests and promoted forestry as a central pillar of industrialization. In his proposal for the establishment of the Forestry Bureau, Ōkubo emphasized that the “protection of forests is a central task of the administration of a national economy” (Nishio 1988:38-39) because forests served multiple environmental functions, such as protecting watersheds. He also considered woodlands to be intrinsic to the success of state-coordinated projects in such sectors as road- and shipbuilding. In short, protection and maintenance of forests had to go hand in hand with other development.

The government’s centralization policy had ramifications far beyond the control of forests. State forests were now the chief source of timber for the nation, and anyone wanting to build large scale facilities such as schools, hospitals, bridges, railroad beds, or ships, needed government permission for procuring material (Nishio 1988). Hard wood from Japan’s forests soon declined rapidly as factories and construction companies extracted enormous quantities of wood for use as fuel and building materials (Ōta 2012). The introduction of German forestry technology also meant that indigenous forest management knowledge was no longer relevant. Around the country, a modern, centrally controlled system of ownership replaced the more traditional communal forest management practices (Niwa 1989).

Most forests were now under state control, but agricultural practices could not be changed overnight. People who had relied on forests for fertilizer mounted considerable resistance throughout the country as they demanded continued access to “their” woodlands (Fukushima 1970). Violent confrontations with the authorities were comparatively rare but resistance took place in the form of indiscriminate logging or arson, accelerating the decline of the forests. Villagers developed sophisticated tactics to repel the state. Illegal loggers used the cover of darkness to fell trees. Backed by the promise that, if caught, their families would be looked after by fellow villagers, these individuals were willing to sacrifice their lives. Fire was another weapon of the disgruntled locals. It was customary for the government to hand over burned trees and shrubs to the villagers. This encouraged people to torch state-owned forests and then stand by and watch as wildfires ravaged the lands, refusing to cooperate with the firefighters. In his important study of farmer hostility, civil law scholar Mitsue Kobayashi pointed out that these resistance efforts, despite their potency, had an important side effect: making the villagers more aware of their rights vis-a-vis the state (Kobayashi 1968).

Civilians who mounted this relatively behind-the-scenes opposition operated from marginal positions. While their actions hampered the government, they posed no actual threat to the system. This relentless and protracted hostility, nevertheless, made it harder for the state to procure much needed resources, including taxes and troops. Although day-to-day resistance does not produce a knockout blow, it keeps an opponent under continuous attack, gradually narrowing their options. As farmers around Japan systematically felled trees and set fire to woodlands, they exposed the limitations of the top-down control which the government was so eager to impose.

The new Forestry Bureau faced not only a barrage of attacks from angry farmers but also severe difficulties in securing the labor needed to manage state-owned forests. Ultimately, the department had to abandon its initial woodland strategy of exclusive state management. Instead, it began to develop more inclusive policies that accommodated local needs to some degree and incentivized villagers to provide much-needed labor (Ogino 1990). For example, the government developed the “local facilities” program to pacify restive farmers. Through this program, the government transferred responsibility for the management of state-owned forests to the locals. In exchange for their labor, villagers gained access to resources such as wood for fuel and grass for grazing. Thus, most “local facilities” developed into “commissioned forests” that were entrusted to local residents. This policy rectified the failure of earlier schemes that had required contracts from forest users for the purchase of non-timber forest products (Matsunami 1920, p. 278). By 1926, 310 sites covering more than 40,000 hectares of state forest had been commissioned to local people (Kikuma 1980, p. 479-608). By 1937, for example, in Akita Prefecture, local facilities in the form of commissioned forests made up 70 percent of the state forests (Kikuma 1980, p. 492). The earlier suppressive policy had been replaced with a modern forest management concept that had been influenced by German forestry technology, prioritizing the sustainable use of woodlands based on scientific evidence (Ogino 1990).

It should be noted here that the Meiji government did not create the “local facilities” system merely to improve the livelihood of the farmers. Its main purpose was to shift the burden of care for national forests to the locals, to eliminate theft, and to motivate villagers to monitor wildfires. The new policy did, however, create space for state-society dialogue and, as a result, the Japanese government began to develop policies that were more inclusive of local people.

Another sign of inclusiveness appears around 1908. After that year’s amendment of the Forest Law, the state began to promote “forest unions,” based on guidelines from the Ministry of Agriculture and Commerce. These unions emerged throughout the country to encourage adequate management of private forests (Matsunami 1920). Supported with low-interest government loans, the unions were responsible for forest maintenance practices such as thinning and branch trimming, afforestation, and public works to conserve the soil.

In short, resource management in Japan gradually veered away from the top-down policies that had relied on police oversight to a strategy that encouraged the locals to engage in resource development willingly (Resource Council 1960). Whatever the motives, the state achieved the desired result, and the country’s forest acreage increased after the woodlands had been returned to the care of villagers (Saito 2014).

## State intervention in the mining industry

The story is very similar when the Japanese state pushed to centralize the development of minerals. Japan has a long mining tradition, as gold, silver, and copper had been extracted in the archipelago as far back as the ninth century. Before the Meiji Restoration, feudal lords had full control over mining activities in their domains. The Meiji government quickly placed all mines under state control and enacted the Japan Mining Law of 1873. To ensure that no ore could be extracted without government permission, this law stipulated that landowner entitlements did not extend to resources below ground (Morita 2012). Centralization of the country’s mining activities was considered essential to secure the metals needed for minting the coins that would enable Japan to adopt a unified system of currency, moving from rice to cash. Furthermore, the Meiji government was also motivated by its quest for foreign currency, which could be obtained through coal and copper exports.

The administrative system of mines underwent a series of complex organizational changes, culminating in the establishment of the Department of Mines in March 1886. In the early days of the Meiji Restoration, the government attempted to impose unified control over the production of copper, a major export for the central city of Osaka. Because of the sizable initial investments involved, jurisdiction over mining was initially granted to the Ministry of Finance. Over the next several years, control was transferred to the Ministry of Agriculture and Commerce, then to the Ministry of Civil Affairs and the Ministry of Public Works. It was finally restored to the Ministry of Agriculture and Commerce in 1886.

As this shifting indecisiveness suggests, the central government faltered in its administration of the newly acquired mines, and bureaucrats ultimately failed to bring about the hoped-for increases in mineral production. Inefficient production and high costs of employing foreign technicians forced the state to privatize key mines, starting in 1889.

But problems continued to plague the mines. An economic downturn and increasingly harsh working conditions sparked a string of labor disputes across Japan. Social unrest reached a boiling point in 1907. Miners rioted at major copper mines at Ashio, Beshi, and other locations and brought operations to a halt. The government sent in the police to suppress the strikes (Ministry of Trade and Industry 1966, p. 396).

There were seventy-one labor strikes in Japan between 1869 and 1898, with twenty-eight (40 percent) taking place in mines, attesting to the harsh and dangerous working conditions of the miners (Sasaki 1971, p. 252). In the early days of the modern period, most miners were farmers who only worked underground in the fallow seasons. As working conditions became increasingly grim, the government found it harder and harder to attract enough laborers. Furthermore, most workers who were willing to tolerate the mines were part of a “spillover population”, outsiders to the four major social classes of Edo-era society: samurai, merchants, farmers, and craftsmen. This affected all labor management policies that the government could feasibly establish (Yoshiki 1980, p. 4). In the end, significant mines, including the Miike coal mine, solved their labor shortage by employing prisoners and Korean forced laborers, both of which were abundantly available even during the peak agricultural season. Mines were a central element in the government’s industrialization pursuits, but securing a steady supply of labor was difficult.

As mentioned earlier, Japan had a long mining tradition. This complicated matters for the Meiji government, as all easily accessible mineral deposits had long been exhausted. Major exploitations now had to be conducted at deeper levels underground, further away from population centers, and this generated ramifications for the skills needed. Since the Edo period, prisoners had worked in the pits undertaking simple manual tasks such as water drainage and transportation. Advanced tasks, including refining and pitting, required technical skills that the prisoners lacked. When Japan introduced Western technology and mechanized many processes, previously labor-intensive tasks like water drainage were also automated. At that point, prisoners were used only for digging and transportation in the deep pits, dirty and dangerous jobs that could not be automated. Amateur artist Sakubei Yamamoto (1892-1984) worked in the coal mines around Chikuhou, in Fukuoka Prefecture, from the end of the Meiji period until after World War II. He left a unique record of conditions in the mines in the form of vivid ink and watercolor illustrations (see Figure 2.1).



Figure 2.1 Illustration of working conditions in mines, which continued largely unchanged until the early Showa period (Sakubei Yamamoto).

Source: Tagawa-shi Coal, History Museum; Tagawa Museum of Art, eds. “Yamamoto Sakubei no Sekai: Tankō (Yama) no kataribu: 584 no monogatari.”

The first exposé of the extreme and inhumane working conditions in the mines was not made public until 1889. In that year, Meiji- and Taisho-era journalist Koichi Matsuoka (1865-1921) conducted a “field inspection” of the Mitsubishi Takashima coal mine in Hizen. His subsequent report caused a public uproar, motivating the government to launch a full-scale investigation. As a result, the Mining Regulation of 1890, the framework on which was based the 1895 Prussian Mining Law, became the first official acknowledgment that the health and basic rights of the miners should be protected. Tellingly, the Mining Regulation was promulgated no less than twenty years before the Factory Act of 1911, which recognized the rights of factory workers.

It would be naïve to assume that this regulation signaled an increase in government goodwill toward laborers. The government’s primary motivation for improving harsh working conditions was to decrease labor turnover. Meiji bureaucrats were familiar with the negative aspects of Western industrialization, understood the damage that labor disputes could cause, and sought to prevent these conflicts from arising in the first place (Garon 1987).

In summary, following the Meiji Restoration, Japan went through a series of rapid shifts in policy with respect to centralization and privatization. After years of turmoil and farmer and worker resistance, the government was forced to recognize the limitations of its initial centralization approach with its policy of police enforcement. The inhabitants of Japan’s resource-rich peripheral regions had managed to maintain leverage in negotiations with the state, and the Mining Law and the Forestry Law had been unable to ignore these groups. On the contrary, these laws reinforced a range of rights, including protection of and support for laborers, which worked to bolster production.

The new worker protection laws, however, were no panacea. While mine owners now submitted regular reports to the state on working conditions, they continued to keep their workers on a tight leash. As will be seen later in this chapter, the new laws made the laborers and farmers utterly dependent on the state for all their security and health services. Viewed through another perspective, these policy shifts allowed the state to extend its regulatory power to include people of all social classes and in all regions of the country.

This concludes our examination of how Japan navigated its industrial modernization process. Next, we investigate how Siam, which started its modernization drive around the same time as Japan, ended up with a very different system for managing its resources.

# 2.4 Centralization in Siam: a story of exclusion

## Tin in the south and teak in the north

Until the latter half of the nineteenth century, Siam had a decentralized system of governance similar to that of Japan during the Edo period. Geographical regions in Siam were managed by feudal lords called Chao Muang, who had great influence over their territories. Local citizens paid tax and provided corvée labor to these lords, receiving, in exchange, protection and recognition of their usufruct rights (Sethakul 1989). Feudal lords had a particularly tight grip on resource management. Teak, which had significant commercial value, was abundant in the north, and in the south, there were rich deposits of tin, a key raw material for early factories and exports. The government’s centralized control of these resources represented a major political revolution, as Bangkok imposed its will on the local lords by transforming resource management.

International politics had a significant influence on Siam’s push to reform its domestic political system. For example, in 1855, the British signed the so-called Bowring Treaty with the Siamese government to promote free trade. This unequal treaty allowed the British to conduct free trade at fixed low tariffs, entitling them to full extraterritorial powers (such as exemption from prosecution in Siamese courts) and the right to own land in Siam. Aggressive moves by Great Britain on its western borders and by France to the east forced the Siamese government into action. In order to effectively resist the menace of Western colonial powers, it was necessary for Siam to establish a centralized bureaucracy supported by a unified tax system, and to overhaul the system of the feudal lords’ control over local resources.

Unlike population-dense Japan, Siam was sparsely populated and had to contend with a scarcity of workers, which made control of the labor force rather than of the land the government’s top priority. Siam had a well-developed system of property rights over people (e.g., slavery) that functioned to support a per capita tax. Until the end of the nineteenth century, debt enslavement was still common, and ethnic minorities frequently suffered slave raids. Around the middle of the nineteenth century, slaves made up a fourth to a third of Siam’s total labor population (Thompson 1947). In terms of managing ownership of land, however, the country lagged behind (Feeny 1989). Some observers theorized that labor scarcity hindered the government’s ability to develop Siamese resources to their full potential (Wales 1934).

One of the key administrative reforms initiated by King Rama V, who ruled from 1868 until 1910, was to convert Siam’s labor-based system of governance into a tax-based one. This allowed the monarch to undercut the power of the feudal lords and establish a central government (Feeny 1989). The government also introduced a money-based tax scheme, just as Japan did after dismantling its in-kind tax system. Registration of land tenure, the basis of the alternative tax system, proceeded after the Land Title Deed Issuance Act of 1908. At this time, the state was still mostly uninterested in land other than rice fields. Thus, the bulk of the newly recognized tenure rights were in the central plains, home to most of the country’s rent-accruing rice fields (Ingram 1971).

When Siam finally took an interest in managing its resources, it was largely in response to the threatening moves of the British. The central government in Bangkok was helpless against the actions of the feudal lords as they granted British companies the rights to log teak and mine tin. European companies began attempting to make inroads into the region in the 1860s (Ross 2014). Tin deposits were rare in Europe but abundant in Southeast Asia, especially on the Malay Peninsula, and at the turn of the twentieth century, tin was in great demand. It had applications in weaving, in the production of electric machinery and weapons, and in food canning, and was widely used to prevent iron from corroding. In nineteenth-century Siam, the royal family officially had a monopoly on tin exports, but in practice, much of the output was controlled by a handful of Chinese families connected to influential provincial governors in the southern regions (Falcus 1989).

The tin business, operated mostly by Chinese and British companies, was relatively free of territorial conflicts. But in the north, teak exploitation was a very different story. Reginald Heber Macaulay noted that the Siamese government’s primary concern was not so much with logging, but with governance issues that affected its domestic and international dealings:

The growing importance of the timber trade was no doubt one of the reasons which determined the Siamese government to take more control of affairs in the north. Their idea no doubt was to get control of the Laos States of Northern Siam, but they proceeded gradually, not wishing at first to upset the reigning chiefs, though eventually they expropriated them and took the administration of Upper Siam entirely into their own hands. (Macaulay 1934, p. 59)

Woodlands had long played an important role in the nationhood of ancient Siam. As complete survey-based maps of pre-modern Siam did not exist, woodlands formed effective, if imprecise, borders between sovereign states (Thongchai 1994). The only places with delineated borders were the timber and tin mining sites of interest to the Brits (Thongchai 1994). Attempts to control the country’s resources were motivated not so much by the market value of teak and tin, but by their geopolitical significance.

In 1891, the state established the Royal Mines and Geology Department (later renamed the Mining Department) as a tool to constrain local players and impose control from Bangkok. The 1901 Mining Act, drafted by German and British advisers, set up a regulatory framework for the mining industry. One of the Mining Department’s first directors was the British geologist Herbert Warrington Smyth. In his memoir *Five Years in Siam*, Smyth lamented the country’s lack of a formal apparatus to administer its mines:

There were a dozen or so big mining concessions in existence, covering in some cases a hundred square miles, a weariness of the spirit of their owners, on which, for the most part, no rents had been paid and no work had been done. They had been mostly granted to men of the concession-hunting type, whose sole objective was to sell their concessions as soon as possible for the highest price to some gullible company. (Smyth 1898, p. 33)

King Rama V introduced a licensing system in efforts to resolve the unending disputes between mining companies, provincial governors, and Bangkok (Krom Sapayakorn Tarani 1992). The new Mining Department immediately set out to conduct geological surveys and draft a code of mining regulations to secure a steady flow of tax revenue. This technology was also key to the creation of a centralized Siamese state (Loos 1994).

The main laborers in Siam’s mines were Chinese immigrants (Ingram 1971, p. 210), who also had highly specialized mining knowledge. Working conditions were harsh, and companies were forced to offer high wages to keep workers (Skinner 1957, p. 110). Although the Chinese were secretive with their technical know-how in order to safeguard their advantageous positions (Malloch 1852, p. 22), the government made no systematic efforts to train local mining specialists or replace Chinese laborers until after the 1930s, when a powerful nationalist mood swept over the country (Krom Sapayakorn Tarani 1992, p. 183–92). Small Chinese mining companies paid royalties of 10–16 percent to the government (Ingram 1971). During the modernization period, the government exerted only some degree of indirect control through its leasing of mining rights, and tin mining in the south remained more or less an economic enclave controlled by the Chinese.

After the British had exhausted teak forests in neighboring Burma, they moved into northern Siam, where they gained significant control over the exploitation of the region’s abundant forests. The government, alarmed by Burma’s ravaged teak forests and the expanding British influence in the region, quickly centralized management of the country’s forests (Barton and Bennett 2010). The Royal Forest Department was established in 1896 under the Ministry of the Interior. Its first chief, called the Conservator (Chao Krom Pamai), was the English forester H. Slade, who had previously worked in forest management in Burma. He remained in his post until 1901. The primary responsibilities of the Siam Royal Forest Department in its early years were survey work and inspection in collaboration with the Royal Survey Department. This included demarcation of lease boundaries, identification of tree species to be cut, and settling disputes (Slade 1901). To limit excessive logging and give Siam’s forests the chance to recover, Slade suspended the issuance of logging leases for at least six years, the first systematic efforts in Thailand to manage forests (Slade 1897).

In short, around the year 1900, the Siamese government clearly began to appreciate the political significance of its timber and minerals. The fact that the Mining Department and the Royal Forest Department were established within the powerful Ministry of the Interior underscored their importance.

## The seeds of an environmental state in Siam

Two developments in Siam bolstered the emergence of an environmental state. First, the government used the threat of Western interference to legitimize its efforts to centralize resource management. Macaulay recounted that “After a short time a regular Forest Department was established. The Siamese Government justified the step to the chiefs by implying that with this measure the Europeans would be kept in line…” (Macaulay 1934, p. 60). Second, in articulating an agenda for resource governance, the government created a blueprint for a new relationship between the state and society.

The Forest Department soon declared that any land in the north without legal ownership or usage was considered property of the king and the Forest Department (Mekvichai 1988). Policymakers were tainted by the prejudice that locals, especially hill people who practiced slash-and-burn agriculture, were a hinderance to the sustainable management of Siam’s forests. Slade, the first to head the Royal Forest Department, characterized the agricultural practices of hill people as “wasteful.” According to Slade, if the government failed to regulate the locals’ hill-clearing tactics, it would never know the amounts of teak at its disposal (Slade 1901, p. 7). In this way, modernizing states claimed a monopoly on management of resources which refused to recognize customary usage rights of the forests in many parts of Southeast Asia (Peluso and Vandergeest 2001). In short, tensions over forest use resulted in a permanently antagonistic relationship between the people and the state.

When a state takes steps to protect forests on its borders, conserving nature is usually not its prime motive. Based on research into primary historical sources, Atsushi Kitahara noted that in the 1920s, when foreign capitalists seized large tracts of Siamese land, the government introduced the “public land” concept to protect and defend its territory (Kitahara 2012). Around the same time, when serious economic recession hit Thailand, the country’s resources were at risk of becoming over-exploited, and the only solution was state enclosure of lands (Kitahara 2012, p. 329). These nationalization endeavors had a powerful impact on the relationship between the state and the communities living near the sought-after resources. Tin and teak, the resources most coveted by Bangkok, were plentiful along the nation’s northern and southern borders, areas that overlapped with the traditional lands of minority ethnic groups—people who were considered to be standing in the way of national unification.

In conjunction with its efforts to secure the country’s timber resources, the Forest Department also set up distribution channels and communication infrastructure in order to reach and negotiate with the rural people. The department’s work was invaluable to the state as it extended its power to the periphery. This centralized management of the country’s forests was also an attempt by Bangkok to finally cement its authority on rural chiefs. Forest administration had become an important tool for reducing the economic base of the once-powerful feudal lords. In the words of Macaulay,

For generations these chiefs (in Chiengmai, Laon, and Nan) had been allowed to govern the country within their respective states without any control from Bangkok, though in theory their power was circumscribed. Therefore, it was not an easy matter to upset the old regimes suddenly, with the reigning chiefs still alive. It also happened that all the chiefs were old men at the time the Siamese Government started its scheme of assuming control of the Laos States. This was around 1896 and coincided with the advent of H. Slade to start a Forest Department. Thus, it may be truly said, that it was through the Forest Department that the Siamese Government inaugurated the system, and this ended with their securing absolute control of the Laos States. (Macaulay 1934, p. 65)

As state-owned forest reserves were enlarged, they triggered acrimonious conflicts with the villagers who had traditionally used the woodlands to support their livelihood. The resistance left the government floundering, and as a result it often granted usage rights on an *ad hoc* basis (Kitahara 2010). The state initially applied a clear-cut policy of “dos and don’ts,” but gradually softened its approach, allowing forest products to be collected for subsistence needs and designating areas that could be accessed without permission.

However, this easing of restrictions was only a passive acknowledgment by the state that peripheral peoples needed access to forests to support their growing populations. It took the government until the 2000s to develop affirmative policies that recognized local rights in state-owned forests.

# 2.5 How Siam and Japan developed distinct patterns of state-society relations

For Siam, natural resources were more than just commodities or sources of income; they were the key avenue for state power to penetrate peripheral communities. From this perspective, it is understandable why the government went to such lengths to extend its control over remote sites of resources that initially had little monetary value. As foreign capital continued to infiltrate Southeast Asia, King Rama V became progressively more concerned about the scramble for concessions, and the rapid depletion of Siam’s northern forests justified the government’s attempt to impose a “science-based” management of resources in the periphery (Barton and Bennett 2010, p. 75).

Around the same time, Japan faced a different problem: resources were becoming alarmingly scarce. With this reality in mind, Toshimichi Ōkubo, the mastermind behind the Forestry Bureau, argued in favor of involving local people in protection activities. Ōkubo’s recommendation was motivated mainly by the recognition that the state alone could not properly manage its forest resources. The state knew that it needed help to take care of this precious resource, and this understanding was behind the Japanese government’s support for the formation of forest unions around 1900.

While Siam and Japan pursued modernization through similar methods of nationalizing peripheral resources, there were two key differences in the way these countries evolved into environmental states. First, the relationship between private business and the government was very different in each. In Japan, the government was quick to reverse its centralization policy and auction off key resources to the private sector (although only state-sponsored businesses were eligible), while in Siam, no resources were sold to private companies. Instead, Siam’s response to rampant logging and excessive allocation of mining rights was to tighten central government control. Although some Chinese companies became powerful mining stakeholders, no domestic actors managed to dominate the exploitation of the country’s most important national resources. This is in sharp contrast to Japan, where industrial and financial business conglomerates, the *zaibatsu*, flourished through resource development.

A second key difference is noticeable in how these two countries developed their labor force. The Japanese government was proactive in offering laborers welfare services and activating legal instruments for their protection. For example, in the forestry sector, the government revised the Edo-period system of “shared forests” in which private actors were contracted to plant forests on government land and share the profits with the state. Villagers gained free access to nationalized forests to gather undergrowth, providing in exchange labor for the management of these same forests. In the mining sector, the Japanese government established policies for the protection of miners’ rights. In Thailand, by contrast, communal rights to forests were not even debated until the 1980s. With regard to the protection of miners, no legal framework existed until after World War II. Throughout Thailand’s modernization process, the central government consistently enforced a policy of control and allocation of resource access (Sato 2003).

It is notable that during the modernization of Japan, labor organizations among miners were strengthened rather than marginalized. Middlemen and sub-contracting labor bosses were key players in Japan’s mines, and their presence meant that the benefits promised by the government’s worker protection policies were not always fulfilled. The result was twofold: labor movements sought direct support from the state to bypass industrialists and labor bosses, and workers established self-help organizations.

One noteworthy example was that of the *tomoko* mutual aid organizations, widely observed in many coal mines around Japan, which functioned as informal networks for skilled miners (Matsushima 1978). *Tomoko* provided insurance for individual workers in case of injury or illness. Mines were often abandoned once all accessible ore had been excavated, forcing its employees to relocate. *Tomoko* assisted skilled miners in moving from one place of employment to another, and in doing so, helped propagate technical knowledge around the country. In efforts to improve their technical skills, some miners also preferred to transfer between mines (Murakushi 1999). *Tomoko* was instrumental in supporting these relocation moves and sought to guarantee respectful treatment of these skilled workers at their next job. The widespread existence of such a system, which helped skilled workers to pool resources, attests to the shortage of expert labor in Japan and the harsh working conditions of the mines.

In Siam, the Chinese migrant workers toiling the country’s mines also established self-help organizations. Unlike the Japanese *tomoko*, which were recognized by the government, the Siamese mutual aid organizations were more like secret societies which operated in defiance of the authorities (Cushman 1991). Revolts did at times stall the administrative reforms of the government. However, these were rare, and the government often succeeded in co-opting them with financial incentives (Ramsay 1979). In the south, the dominant Chinese mining conglomerates had considerable influence, taking it upon themselves to settle disputes. For the government in Bangkok, these conglomerates formed a useful buffer against British influence on the Malay Peninsula (Cushman 1991). Protection for laborers were not codified into law until 1956, at which point workers gained the right to organize and bargain collectively with employers (Mabry 1979). In short, laborers in both countries worked to establish self-help organizations. At face value, these organizations supported similar goals, but in Japan they enjoyed a much more beneficial relationship with the state than in Siam.

# 2.6 What made Japan and Siam different?

## Socio-ecological endowments

Japan and Siam started on their road to modernization around the same time. The mining and forestry industries were pivotal in both countries in shaping a new relationship between state and society. On the whole, however, natural resource development had very different results in Japan and Siam. There are three reasons for this.

First, in Siam, mining and forestry operations took place in enclaves that were geographically distant from the rice-cultivating center of the country. Resource development relied on the input of the hill people and Chinese laborers, groups which functioned outside the direct control of the central government. The state had few incentives for improving the working conditions of these non-Siamese laborers, particularly in the 1920s and 1930s, when a nationalist mood prevailed in the country (Thompson 1947, p. 230). In Japan, by contrast, forest products and minerals were indispensable for the peasant agriculture that generated most of the country’s tax revenue. Thus, the process of developing Japan’s natural resources gravitated toward a closer relationship between the state and society. Partly due to the state’s decision to give local people a measure of control over forests, Japan was able to preserve its forest coverage. The government already had an excellent foundation to build on in the example of the Edo-period forest cultivation system which relied on local foresters and private companies (Saito 2014). Japan also had a severe worker shortage. To persuade farmers into the mines, the state had to improve labor conditions and recognize customary worker organizations like the *tomoko*.

The second reason for Japan’s and Siam’s outcomes was their approach to incorporating Western technology. Siam hired Europeans into high-ranking positions in departments working with resource development. With these Europeans came the concept that resources should be exploited as efficiently as possible with no undue respect for local communities or customs. In Japan, however, power was vested mostly with domestic politicians who had studied abroad and reform-minded bureaucrats who were eager to learn but also to adapt knowledge from Western European countries. These individuals were also aware of the adverse side effects of Western institutions and technologies. In the Home Ministry, “social bureaucrats”, understanding the negative consequences of industrialization in Europe, had a leading role in legislating protective measures for factory workers (Garon 1987).

Third, past experiences with resource development took different forms in Japan and Siam. Japan had a longer history of resource exploitation with a wider range of resources, some of which were already scarce by the early Meiji period, and this motivated people to consider how they could make the most of what they had. These circumstances led to a high level of interdependency in which resources relied on other resources, as exemplified by the farmers who needed forest undergrowth to fertilize their crops. This, in Japan, formed one of the bases for state-society relations. In Siam, on the other hand, early forest management was geared almost entirely on securing commercially valuable timber, such as teak. Mining development focused almost entirely on tin, as did the Siamese government’s interventions into mining. In Japan, the government’s involvement with mining operations targeted a much wider range of minerals: copper, gold, silver, coal, and iron; this prepared Japanese state to be more “environmental” in its coverage.

A state manages to penetrate its remote societies in different degrees, and this deviation cannot be attributed solely to administrative capacity. This comparison of Siam and Japan shows that the state’s capacity to penetrate communities outside the center is a function not just of government, but of the particular ways in which the state and societies relate to each other. In Japan, state involvement in mining relied on privatization and traditional workers’ associations. As Siam modernized, the state’s initial incursions were exploitative, rooted in a colonial approach that viewed natural resources as tradable commodities, and the state’s influence remained limited outside the labor and natural resource rich areas.

Japan’s and Siam’s interactions with people through resources were different, ultimately producing two distinct patterns of state-society relations. These different systems guided the evolution of each country into a distinct type of environmental state.

## Sowing the seeds of inversion

Japan and Siam advanced two different models of state incursion into natural resource development: an inclusive and an exclusive approach. However, as this chapter has shown, the dissimilar approaches in these countries did not evolve necessarily through deliberate choices made by their respective governments. In Japan, the government increased its control of state-owned resources by involving the local people in governance, not out of a desire to prioritize the welfare of the people involved but because limitations in the state’s administrative capacity left it with no choice but to rely on locals. The government had to adopt an inclusive approach; the alternative would have meant giving up its modernization ambitions.

The situation in Siam is also complicated. Its exclusionary resource management policies effectively hobbled the Siamese government, curtailing its reach. In some ways, this allowed local people greater freedom at the early stage. The interdependency with the state, however, gradually expanded as Thai modernization penetrated deep into the remote periphery.

One fact is certain: governance of the environment in Japan and in Siam has gone hand in hand with governance of the people. When these states attempted to concentrate power over peripheral resources into the political center, their efforts shaped state-society relations in these remote regions for generations to come. Both countries differentiated land as private or state property, and both appropriated nearly all underutilized forests for the state, leaving a lasting legacy of conflict between the state and the people. At this point, the methods applied by Japan and Siam diverge. The Japanese state quickly adapted its early approaches to accommodate people at its fringes and enlist them into the state’s policies –– for example, by recognizing customary use of forests and facilitating the creation of forest unions. In Siam, the government’s adopted approach to resource management––and one which is still in effect––disregards the hill people and local communities.

This suggests that when an environmental state becomes inverted today, our search for explanations should go beyond an investigation of how the country implemented its environmental policies in a current sense. The seeds of inversion may have been sown much earlier, during the process that converted the country into a modern nation based on the distinct forms of relationship between nature and society.

In this chapter, we investigated why early modern Siam and Japan aspired to exert control over their natural resources at a time when forests and minerals did not contribute much to state revenue. We discovered that the process of creating structures for developing and using resources shapes relationships between people, and that these new relationships can change the character of a state and its approach to governance.

Japan and Siam both experienced the menacing prospect of colonization, power struggles between the political center and the periphery, and conflict between farmers and the ruling class. Despite these similarities, Japan adopted an inclusive approach to resource management while Siam took a more exclusive path. Why? As this chapter points out, in Japan, the state and the periphery had to rely on each other to manage resources properly. There was not much of a choice. In both countries, state-society relations which were formed in the nineteenth century persist to this day, with seemingly age-old ways even as their institutional appearance may seem totally different from when both countries initially began their steps toward becoming environmental states.