

philippine studies

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Philippine Studies vol. 52, no. 3 (2004): 320–344

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Fri June 27 13:30:20 2008

"The Tree as the Enemy of Man": Changing Attitudes to the Forests of the Philippines, 1565–1898

Greg Bankoff

This article questions the accepted notions—propagated as much in the present as in the past—that the exploitation of Philippine tropical forests commenced only with the establishment of American colonialism in 1899, that Spanish forest policy was not commercially orientated, and that widespread deforestation began only under American auspices. Rather than a clear break with the past, the onset of American colonial rule represented a change in organization and technology. The fundamental transformation in attitudes about what sort of resource the archipelago's extensive forests represented took place during the second half of the nineteenth century. This change was reflected in altered practices at both the government and community levels. This article charts the nature and extent of these changes in attitude by examining the use and demand for wood between 1565 and 1898.

KEYWORDS: forestry, Spain, commerce, perception, customary rights

It is a common enough opinion that the climatic conditions of the Archipelago improve at the same rate as the forest diminishes, and there is no lack of those [here] who see the tree as the enemy of man.

—Forestry engineer Sebastian Vidal y Soler (1874, 37, 108)

There is an accepted notion that the exploitation of Philippine tropical forests commenced with the establishment of American colonialism in 1899. Prior to that date, the forests were seen as so much timber whose properties made them suited for particular purposes like

shipbuilding or church construction; after that date, as so much lumber that could be gainfully cut for export. Thus, George Ahern (1917, 492), reflecting on his career, wrote of the "vast stretches of unmapped and sparsely inhabited forests" that the Americans encountered in 1900 and lamented that "no effort has been employed to make use of [them]." Dean Worcester (1914, 847) even went so far as to compare Philippine forests to so much "money in the bank." Implicit in these statements is that a change in attitude paralleled the change in colonial regime: that American sovereignty over the islands signifies a clear break with the past, the triumph of capitalism over mercantilism. In the event, it was far less dramatic than this. The fundamental change in attitudes about what sort of resource the archipelago's extensive forests represented took place during the second half of the nineteenth century when the Philippines was still under Spanish colonial rule. Moreover, it was a change that was increasingly reflected in altered practice at both the government and community level. Instead, what really came to separate the two colonial administrations was more a matter of organization and technology than fundamental disagreement over what should be done. The processes that transformed wood into lumber were already at work and the forest had already become an arena for competing profit interests prior to 1898. This article sets out to chart the nature and extent of those changes. While comparative studies elsewhere on colonial forestry are reasonably extensive, those on the Philippines prior to the twentieth century scarcely exist.¹ The lack of research has propagated the myth that Spanish forest policy was not commercially orientated and that widespread deforestation began under American auspices only.

Wood from the Forests, 1565–1863

At the time of European contact in 1521, most of the Philippines were covered in forest. Early visitors were struck by its extent and its variety. Miguel Lopez de Legazpi (1568, 242; 1569, 59) and others wrote to Philip II soon after the establishment of the Spanish colony praising the "abundance of timber." Others commented on the forest's fecundity, the prevalence with which "cinnamon trees, brasil-trees, ebony, orange, and other trees that bear delicious fruit" grew, and the abun-

dance of "incorruptible woods, such as ebony, cedar, cypress, cedar, and small pomegranate trees" (Mirandaola 1574, 225; San Nicolas et al. 1624, 197, 227). However, despite the islands' low population density (Junker 1999, 62), there were early indications of localized deforestation, of mountains "almost everywhere destitute of forests" and of peaks "cleared and despoiled of trees," and even complaints about the scarcity of timber around Manila (Quirante 1624, 267–68; Perez 1680, 293). These localized indications aside, the discourse predominantly remains one of profusion and plenitude throughout the seventeenth and eighteenth centuries, even if the remarks that extol the great stands of molave or the extensive mountain forests tend to increasingly recede from the main centers of Spanish power (Perez 1680, 292; Velasco 1760, 91).

In one respect, of course, forests were simply cleared for agriculture and settlement as the population of the archipelago rose from under a million in the mid-sixteenth century to about seven million by the end of the nineteenth century. While land was mainly cleared for cultivation, a great deal of timber was also required for building. Indigenous houses were primarily constructed of bamboo, roofed with nipa palm, and raised on hardwood poles known as *barigues*. Molave was preferred as it was particularly resistant to attack by *anay* (white ants) and was perceived as valuable enough to be left to one's children and even grandchildren (Medina 1630, 241). The Spanish also initially built their towns and churches primarily of wood; even quite notable buildings, such as the cathedral in Cebu, were timber constructions (Gentil 1781, 207). These structures were expensive to maintain as not only did untreated timbers deteriorate rapidly but also many of the softer or lighter-colored woods simply rotted away within five to six years and needed replacing (Salazar y Salcedo 1599, 98; Medina 1630, 283; Aduarte 1640, 142). Wood, however, continued to be the favored building material on account of its elasticity during seismic disturbances, such as the devastating earthquake that largely reduced Manila to ruins on 30 November 1645 (Diaz 1718, 167–68). Unfortunately, though, these structures were also highly flammable.

Fire was a constant danger, with houses catching alight frequently and Manila menaced three or four times by major conflagrations, one

of which in 1583 virtually destroyed the city and another in 1603 of "such magnitude that before nightfall half the city had burnt" (Vera 1587, 298; Salazar 1588, 66; Felipe II 1590, 205; Acuña et al. 1604, 129). Again, in 1628, a terrible fire burnt down practically the whole of the Parian, the Chinese quarter of the capital, "since it was at that time built of reeds and nipa, or of dry boards, which burn like a torch" (Aduarte 1640, 83). Fire posed such a persistent hazard that the Spanish purposely began to replace wood with stone, regardless of the dangers from earthquakes to which they knowingly exposed themselves (Acuña et al. 1604, 130; Medina 1630, 278; Fayol 1647, 217). The threat of fire remained ever-present in urban areas like Manila whose *ayuntamiento* (town council) had recourse to banning the construction of houses made of *materiales ligeros* (bamboo and nipa) in the same neighborhood as those of *materiales fuertes* (stone and tile) and so effectively created a walled European city (*Intramuros*) and an outer Asian one (*Extramuros*). Areas constructed predominantly of bamboo and nipa continued to be frequently leveled especially during the dry months preceding the monsoons in June. Major conflagrations occurred in Santa Cruz in 1847, Tondo in 1854, San Nicolás in 1863, Ermita in 1865, Meysig in 1866, and San Miguel in 1869 (González Fernández 1875, 173–78; Huetz de Lempis 1998, 170 n. 22).² The lack of urban planning, frequently lamented by the authorities, ensured that once lit a fire spread rapidly from building to building so that "not a day passes without, unfortunately, a report of fires" (*El Comercio*, 30 April 1891).

This ceaseless building and rebuilding was not the only major demand upon the timber resources of the islands. Spain also needed ships to defend her new possessions in the East. Ever mindful of the need for suitable wood, writers of early accounts of the islands were quick to appreciate their potential for naval purposes (Legazpi 1569, 59; Mirandola 1574, 225; Sande 1576, 59). In a letter to Philip II, Juan Pacheco Maldonado (1575, 303) estimated there was enough timber to construct three to four galleons each year, and Francisco Leandro de Viana (1765, 296) thought there was enough for "at least ten." Not only was there an "abundance of wood for all kinds of vessels" but Filipinos also proved to be "very skilful in making ships" (Santiago de Vera 1586, 206). Shipyards were first established at Cavite and Oton,

but by the early sixteenth century vessels were also constructed at Masbate, Marinduque, Camarines, and Albay. By 1616, six out of the seven galleons stationed at Manila for its defense had been built in the islands (Pineda 1619, 180). These were not just smaller crafts but large ships: the *Santa Rosa*, began in 1674, was one of the finest ships of its age, while the *San Jose*, launched in 1694, was reputedly the tallest ship afloat anywhere in the world (Corpuz 1989, 92–93). All these vessels required continual repair due to wartime losses, the need to replace timbers in tropical waters, and the frequency of shipwreck (Pineda 1619, 171, 173; Medina 1630, 85; Corcuera 1636, 286; Diaz 1718, 211).

The quality of Philippine timber was especially suitable for ship construction. If properly seasoned, timbers could withstand the sea and the elements for over fifty years. Ramon Jordana y Morera (1891, 226) mentioned two brigantine-schooners, the *Soledad* and the *Feliz Esperanza*, constructed in Pangasinan in 1825–1826 and still in active service in 1877. But such was the haste with which vessels were built that unseasoned wood was often used, necessitating that “one must tear up the decks every two years and put down new ones” (Tenza 1618, 131; Pineda 1619, 173). The amount of timber consumed in naval construction over the decades was substantial. Michael Williams (2003, 193) has estimated that a seventeenth- or eighteenth-century European warship of 1,000 tons required about 2,000 mature oak trees or the equivalent of timber from 16 to 20 hectares of woodland.³ In the Philippines, the scale of the endeavor can be partly estimated by the amount of labor required. Municipalities had to provide people to work in the shipyards or fell timber, the dreaded *corte de madera* (San Pablo 1620, 71–76; Cushner 1971, 117–26). The manpower required was immense: the masts of one galleon reputedly involved the efforts of six thousand Filipinos for three months simply to transport them (Rios Coronel 1621, 203).⁴ So onerous were the labor exactions, especially in the provinces closest to Manila, that they caused insurrections on more than one occasion, with major revolts in 1614 and again in 1649 (Vila 1701, 126; Corpuz 1989, 124–28).⁵

Actual forest cover prior to the Second World War is difficult to gauge but a better idea of its extent is possible from the second half

of the nineteenth century. A systematic description of the provinces is provided by Ramon Jordana y Morera's *Memoria sobre la Producción de los Montes Públicos de Filipinas* for 1871–1872. Largely deforested were the areas around Manila including Bataan, Cavite, Morong, and the Isla de Corregidor. Abra and Laguna, too, had already lost much of their forest cover. The main timber-producing areas were Bulacan, Masbate/Ticao, Mindoro, Nueva Ecija, Pampanga, Romblon, Zambales, and especially Tayabas. Agriculture was encroaching upon the woodlands of Batangas, Cebu, Isabela, Panay, and the Ilocos region.⁶ Usage was still mainly local in Camarines Sur and Norte, La Union, Pangasinan, Lepanto, Tiagan, and Balabac. Primary forest was to be found only in central Luzon (Cagayan, Infanta, and Nueva Vizcaya), parts of the Visayas (Siquijor, Negros, Samar, and Leyte), and some of the smaller districts and island chains, while the potential of Mindanao remained largely unexplored (Jordana 1873–1874).

In fact, the extent to which considerable areas of Luzon were already deforested prior to the twentieth century has been underestimated. Vidal y Soler (1874, 11, 28) observed how the “axe and fire ha[d] no moment of repose,” and described the scale of timber extraction in the provinces of Tayabas and Nueva Ecija and the lost forest cover of Batangas, Cavite and the greater part of Bataan and of nearly all the mountain sides on the Pacific west coast. He lamented how deforested slopes caused rivers to run dry or alternatively turned them into raging torrents that caused floods like the one that devastated Pampanga in 1871. How navigability on waterways such as the Pasig and the Rio Grande de Cagayan rivers had deteriorated, how schooners were no longer able to reach Pagalungan on the Rio Grande del Sur on Mindanao, and how gunboats frequently ran aground near the river-mouth in Cotabato. On a visit to the largely untouched south, he reported not being able to proceed further upstream than two kilometers on the Parang-Parang River near to Pollok as “the water level scarcely reached half way up one’s leg” (ibid., 38–41). People were aware of the connection between forest cover and precipitation and consequently apprehensive of how the loss of one disadvantageously affected the other. Cebu was cited as an example. In Manila, long-time

residents told how the climate had changed, how hot spells were more extreme and the rains less. Others noted how the forest had acted as a defense against the strong winds of *baguios* (typhoons) that regularly struck the archipelago between July and November (*ibid.*, 36).⁷ All this real and anecdotal evidence pointed to the conclusion that the “myth” of an archipelago covered in an inexhaustible mantle of tropical forest “could not be further from the truth” (*ibid.*, 11).

It is only in the latter nineteenth century that the degree of remaining forest cover can be properly estimated (table 1). Moreover, a detailed provincial breakdown of forest cover compiled by the Inspección general de Montes does exist and was published in 1875 under the title *Memoria de la Colección de Productos Forestales* on the occasion of the Philadelphia Universal Exposition that assessed the timber stands at 19,405,915 hectares (*Memoria* 1875, 40). That is to say, the forest still occupied approximately 70 percent of the islands and had only decreased by about a quarter in 300 years. These figures, however, are always based on the total land area of the present nation-state and not on those areas of the Philippines effectively under Spanish colonial administration that excluded most of the second largest island of Mindanao. Subtracting the latter’s 10,207 square kilometers from the total land area of the archipelago and recalculating the remaining forest cover over the same period yields a figure more like 50 percent still

Table 1: Forest Cover and Population of the Philippines, 1565–1950

Year	Forest cover (ha.)	Percent cover	Population
1565	27,500,000 ^a	92	800,000 ^b
1875	19,405,915 ^c	70	6,173,632 ^d
1903	20,740,720 ^e	70	7,635,426 ^f
1918	18,819,281 ^f	64	10,314,310 ^f
1932	16,950,873 ^f	57	13,636,350 ^f
1950	14,814,800 ^g	50	20,275,000 ^h

Sources: a Ibon (2000, 2); b Junker (1999, 62); a higher figure of 1,250,000 is given in Corpuz (1989, 29); c *Memoria* (1875, 40); d Montero y Vidal (1886, 156–160) data for 1877; e Bureau of the Census (1905, 77); f Bureau of Forestry (1933, 676, 732–37); g Kummer (1992, 187); h Lahmeyer (2003)

under timber. According to this calculation, then, approximately half of the forest had already disappeared prior to the American era.⁸ Indeed, it was the scale of this destruction that was partly responsible for Spain's creation of a forestry department, the Inspección general de Montes.

Lumber from the Forests, 1863–1898

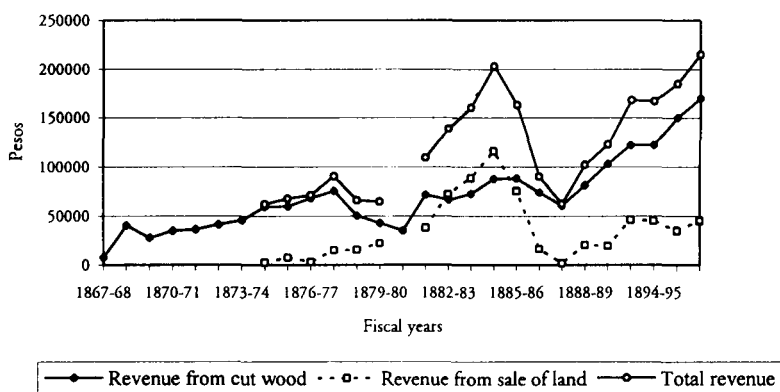
Spanish forest law was based, as was so much else, on the (*Recopilación de las*) *Leyes de Indias*, specifically Law 14, Chapter 17, Book 4 promulgated in 1594. It had two provisions. The first protected indigenous people's right to cut timber in the forest for their own use, and the second forbade all activities that might impede the growth of forests. By the late nineteenth century, the widely held belief that timber was an inexhaustible resource was being challenged by a few people in the Philippines who held the government responsible for the wanton destruction of the forest and for not enforcing the law that protected it from both those who abused their traditional access to cut timber commercially, and from a pernicious new class of speculators who were able "to grow rich at the expense of the state" (Jordana y Morera 1891, 228). From its modest beginnings of one inspector and four assistants in 1863, the Inspección general de Montes grew to be an agency of considerable size comprising nine engineers, fifty-six assistants, six senior guards, and fifty minor guards, plus a number of clerks, porters, and orderlies by 1891. Its effectiveness, however, was always hampered by a shortage of manpower.⁹

The task ahead for the new service was daunting. On the one hand, it was charged to protect indigenous people's rights and, on the other, to stop flagrant breaches of the law and so better manage the forest for the benefit of state, agriculture, and industry. Under the *Leyes de Indias*, all Indios (as the colonial subjects of the archipelago were called) had the right to cut timber and collect forest produce for their own usage without need of license or permission. At the same time, each *pueblo* (municipality) was considered to possess a certain amount of community land the use of which was common to all its inhabitants. The nature of these privileges and the exact dimensions of these areas

were never defined in law but had come to be considered over the centuries as customary rights. Though there must always have been occasions for tension between contending interests, colonial authorities, both secular and ecclesiastic, had been careful to respect these privileges and sufficient timber had been available to meet most needs. Trouble arose as a steadily growing population, centuries of unrestrained forest exploitation, and a new commercialism created an internal timber market, certainly by the mid-nineteenth century and possibly even earlier. Not only was wood cut and sold for money but the authorities were now also interested in raising revenue through the sale of what they regarded as *terrenos baldíos* (literally, barren or waste lands) but actually mainly "state" forests.¹⁰ Legal ambiguity and the desire to turn a profit provided opportunities for some and trouble for others, and often brought colonial official, timber merchant, and local inhabitant into collision.

The state was trying to foster the development of the colony during the nineteenth century. Spanish authorities promoted agriculture through the sale of what they saw as underutilized land and passed a series of legislative measures to facilitate its alienation during the first half of the nineteenth century (Vidal y Soler 1874, 67–68).¹¹ One of the first tasks assigned the Inspección general de Montes was to survey each province initially to reveal the extent of the "anarchy and arbitrariness that reigned in the forest" and subsequently to classify which lands were best suited for cultivation and which had better remain timbered for reasons of climate, health, or hydrology (Jordana y Morera 1891, 228, 242, 246). In more populated areas, this effectively meant demarcating land that was communal from that which could be sold. Inevitably any town whose lands were judged alienable protested, "giving rise to interminable questions that [we]re impossible to resolve" (*ibid.*, 263). So slow did the process of legal adjudication become and so great the backlog of cases that the sale of state land effectively came to a temporary standstill in the late 1880s, resulting in a "paralysis of administrative functions and the impossibility of realizing the most promising course of agricultural development" (*ibid.*, 234, 264). Revenue from land sales, however, was substantial between 1867 and 1897 (figure 1).

Figure 1. Revenue Generated by the Inspección General de Montes, 1867–1897



Source: Jordana y Morera (1891, 240, 254, 275); Nano (1951, 20)

What made this competition between indigenous farmer and colonial state all the more acute and the ambiguities in the law all the more necessary to resolve was a new commercialism that began to pervade attitudes and outlooks by the second half of the nineteenth century. On the one hand, the Indio discovered he could sell the timber he cut over what he needed. On the other hand, a new forest entrepreneur appeared as a response to market forces, the *contratista* or timber contractor, himself part of a larger commercial class then emerging in the archipelago. As private demand exceeded state exactions for wood, it created a timber market and a boom in licensed logging and a problem with illegal cutting. Profit constituted a powerful new force in forest destruction and the *contratistas* a third force in the forest equation, one whose interests were frequently opposed to those of the state but who were often equally at odds with local communities.

The nineteenth century market for timber was centered on Manila; provincial markets were relatively small and unimportant.¹² It was to the capital that most commercial wood was transported, primarily by water. Joseph Burzynski's (2002, 171–80) study of local shipping records for the period has shown how what began as a fragmented, poorly ordered, and inefficient trade in 1864 developed into a more coherent, better structured, and increasingly specialized one by the late

nineteenth century, a trade, moreover, increasingly synchronized and responsive to the forces of supply and demand. The stimulus for this transformation was the growth of Manila: the population rose from 93,000 in 1814 to about 340,000 by 1896 (Montero y Vidal 1886, 157; Foreman 1899, 355; Foronda 1986, 135). As the population of the capital tripled, it became an ethnic melting pot where Spaniard, Chinese, and other foreigners mixed with migrants from around the archipelago (Le Roy 1968, 53). This rapid urbanization generated a strong demand for timber that only soared in the aftermath of the great earthquakes that rocked Manila in 1863 and 1880 (see figure 1). Owners with substantial houses to repair turned to the market for the timber they required. Prices rose and local merchants saw an opportunity to make quick profits. Such was the devastation in 1863, moreover, that it prompted a change in house design and the replacement of stone by greater quantities of wood to give buildings extra flexibility to withstand seismic movements (Zialcita and Tinio 1980, 66–67). A calamity fund was even proposed after the 1880 earthquake that would have involved stockpiling timber on the island of Masbate to prevent profiteering (Jordana y Morera 1891, 252–53). So great was the level of destruction on these two occasions that it proved a significant impetus to the timber market and encouraged the reckless felling of trees, many of which were subsequently left to rot on mountain sides or beaches.¹³

The Inspección general first introduced a system of logging permits in December 1867, but it was not until 13 November 1884 that a royal decree imposed a set of definite forest regulations that classified woods into five revenue groups, imposed an impost of 10 percent on the assessed value, introduced charges on timber used for other purposes and on minor forest produce, and limited the amount that could be cut for personal use to a thousand cubic feet. More importantly, it mandated that all future laws had to conform to these provisions. The problem, however, was one of enforcement as the exercise of indigenous rights provided all kinds of legal ambiguities that made the application of any law difficult. Logging with or without a license continued apace as there were ample opportunities to either circumvent the rules or ignore them. In particular, it was difficult to make those used to cutting wood at their own discretion to conform to regulations

that were resented and seldom enforced by local authorities (ibid., 235, 238, 242). Thus, Nicolas Cárdenas, *gobernadorcillo* (mayor) of Catbalogan on Samar was accused of constructing a boat from illegally cut timber in July 1874. His defense that the wood had been cut two years previously and "it wasn't necessary to get such permission in those days" was upheld (Corte de Maderas 1874). Less fortunate was Antonio Lasan whose defense of ignorance was dismissed when he was found to have supplied 455 poles cut from illegal timber for the repair of the telegraph line in Cagayan in 1883 (ibid. 1883a). In a routine letter to the Civil Governor of Manila Province, Manuel Arroyo commented on the amount of timber to be found lying around Montalban and the urgent need to discover from where it originated (ibid. 1896). Even those people who obtained the necessary permits might still cut more timber than what their licenses had entitled them. Elaborate precautions were instituted to limit this underreporting but the practice was widespread. The brigantine *Librada* outward bound from Paluan (Mindoro) was found to carry 805 cubic feet more timber than listed on its manifest, and its owner fined accordingly. Likewise, the brigantine, *Julia*, sailing from Guinayangan in Tayabas underreported the dimensions of its cargo by over a thousand cubic feet (ibid. 1885).

On the other hand, overzealous application of the law carried its own risks and brought the forestry service and its agents into disrepute. People accused the staff of retrospectively charging for timber used in already completed houses, causing much public annoyance (ibid. 1884a). Sometimes, though, it was expedient to simply "overlook" certain activities. In 1882, the political-military governor of Zambales reported how, as a way of meeting their tax obligations, highland people were bringing timber and firewood into town that townspeople then bought for their own use or for reselling. The governor was worried that he might drive these people away if he attempted to collect the state impost due on the timber, and petitioned to collect the tax from those who bought the wood instead (ibid. 1882). Reports also suggest that trade in illegally cut timber increased considerably during the second half of the nineteenth century, causing significant damage to the forest through loss of the most valuable trees and by the spread of unproductive cogon grasslands that prevented regrowth, "destroying a wealth

that if well administered could be considered as a permanent source of production and prosperity" (ibid. 1876).

The wealth that could be made from the timber trade attracted a new group of entrepreneurs. As Adolph von Bosch (1901, 114), a Belgian merchant of ten years' standing in the Philippines, declared in his evidence before the Philippine Commission in 1899: "I think it is the best business." Although there was also a significant minority of Chinese and Chinese mestizos, most of the early *contratistas* were Spaniards (Burzynski 2002, 177–78), men such as Manuel Soler who lacked money to return to Spain and who started a business collecting firewood in state forests already logged over for naval purposes (Corte de Maderas 1870). Over time, however, as the trade in timber became more lucrative and more specialized, the Chinese increasingly assumed a greater predominance (Wickberg 1965, 104). By 1874, Domingo Vidal y Soler observed how most of the timber yards in Tanduay, Santa Cruz and Echague were owned by Chinese (Zialcita and Tinio 1980, 37), while his brother, Sebastian, commented on their significant role in forest products (Vidal y Soler 1874, 87). By the 1890s there were at least nine important Chinese timber merchants mainly located on the Calle Lacoste. They even formed their own business association, the *Ch'ung Ning She*, to better increase their bargaining power with logging contractors (Wickberg 1965, 104). Chinese were also involved in other aspects of the timber industry such as the provision of cordwood and charcoal for sale to *sari-sari* and other small stores (ibid.). They dominated timber sawing, preferring to cut by hand to save the wastage of sawmills (Collins 1901, 83). An American with twenty-five years logging experience, Thomas Collins (1901, 80) opined in 1899 that "the Chinese pretty much run the wood yards." As a consequence, they were generally held in disrepute, felt to be "inclined towards all types of fraud," possessed of a profit motive that "ma[de] living almost impossible for a rational human being," and engaged in ceaseless economic pursuits in overcrowded dwellings that "convert[ed] various streets of Manila into veritable sewers" (Vidal y Soler 1874, 85, 87).¹⁴ Their activities were always the subject of official suspicion. In February 1892, José de Ibarra reported to his superiors the Chinese he saw "hanging about virtually every stairway" aboard the mail-boats en route to and from

the South, accusing them of smuggling forest merchandise. He noted how there were many Chinese within his jurisdiction on Balabac with *cedulas* (identification papers) that showed them to be residents of Manila or some other distant place but who stayed for months or even years without any visible means of support (Corte de Maderas 1892).

While the timber merchants were the most visible sign of this new commercialism, local contractors did the actual logging in the provinces. These men were also imbued with the spirit of entrepreneurship. They worked mainly on a piece-work system using labor gangs that the Chinese called *paqueao* (Wickberg 1965, 104). Trees were felled using axes and cross-saws, squared, and then hauled to the beach by carabao, an average log requiring from eight to ten animals. Often rough "roadways" were first hewn out of the forest to facilitate transport. Contracts always specified delivery to the water's edge (Bosch 1901, 112; Collins 1901, 82). Some of these provincial contractors were also Chinese, men such as Lorenzo Cheng-Guatco, resident of Moron who obtained twenty-one licenses to cut 886 beams in 1887, or Manuel So-Tuico, resident of Binondo who solicited fourteen licenses to cut 547 beams in 1889 (Corte de Maderas 1887a, 1889b). Others, however, were men from a variety of ethnic backgrounds who seized the opportunities presented by an expanding timber market, contractors like Julian Andreas of Navotas who was granted nine licenses to cut 195 beams (11,164 cubic feet) from the public forests of Bagac and Orion in 1888 (ibid. 1888b). These men were also "professionals" in that they engaged in this activity year after year: men such as Doroteo Inocencio, a contractor who logged over three hundred beams a year (13,000–17,000 cubic feet) in the late 1880s. Most of this timber was lesser quality hardwoods but others were of more value like amugis and guijo (table 2).

This new market for timber was not without its distortions. Vidal y Soler (1874, 57) complained in the 1870s that the small number of merchants in Manila constituted a monopoly and so could influence the price of wood unduly. Collins (1901, 84) also decried the cartels that controlled the price timber sold for in China, the only overseas market of any note for Philippine woods before the twentieth century. The state, too, remained a formidable player especially with respect to ship-

Table 2. Type and Amount of Timber Cut by Doroteo Inocencio, 1888–1889

Species	1888	Cubic feet	Average beam	1889	Cubic feet	Average beam
Amugis	10	377	37.7	13	610	46.9
Guijo	15	602	40.1	32	2,187	68.3
Lauan	12	612	51.0	32	3,120	97.5
Maníknik	181	8,119	44.9	228	9,722	42.6
Tangile	83	4,064	49.0	33	1,402	42.5
Total	301	13,774		338	17,041	

Source: Corte de Maderas 1888a, 1889a

building. In fact, concern over declining forest resources was initially occasioned primarily by the difficulty in securing the valuable hardwoods needed for naval construction and the consequent need to obtain such timber from overseas at higher prices (Jordana y Morera 1891, 235). Shipyards were consequently established all across the archipelago at sites near stands of good timber, but the amount cut often exceeded need and much was wasted (*ibid.*, 231). Large quantities of timber were also required for public works and to repair infrastructure damaged by floods or typhoons (Corte de Madera 1887b). Some of this “public” wood also found its way onto the market with consequent effect on supply and demand (Jordana y Morera 1891, 231). As a result, prices fluctuated constantly, varying as much as 30 cents a board foot in a single year as timber was alternatively abundant or in short supply (Bosch 1901, 114).

Competing for the Forest

All these different interests that together represented the new commercialism at work were often difficult to reconcile and the forest became an arena in which were played out many of the conflicts associated with modernity: traditional rights versus market-driven imperatives, local needs versus external demands, development versus conservation. Not, of course, that these issues were necessarily portrayed as such or in as clear cut a manner as such a typology might suggest. The *contratistas*, for example, fretted over the new regime of taxes and licenses and

objected to state attempts at regulating their activities, claiming that it raised the price of wood (Monetro y Vidal 1874, 33). Thus, Luis Ora, one of the new entrepreneurial elite, blamed the decree of 1866 that levied government imposts on timber for adversely affecting the availability of timber on the market and so preventing him from fulfilling a contract to supply cigar boxes (Corte de Maderas 1868). But opposition also came from communities who viewed the activities of timber contractors as infringing on their rights to the forest and its produce. The case of the *principales* (native elites) of Cardona in the district of Morong is interesting in this respect. They submitted a complaint in 1870 claiming that a timber license granted to the Spaniard Manuel Soler (already mentioned) was prejudicial to the pueblo's interests. In particular, they accused him of exceeding his licensed quota of wood, of employing an "excessive number" of Chinese loggers, of collecting timber from communal lands, and of felling trees earmarked for the completion of their church. Investigation, however, revealed a somewhat different story: that Soler had taken no more than three shiploads of firewood, that he had no more workers than permitted, and that no work had been done on the local church since 1857. The report wryly concluded that there was no danger of depleting the nearby forest, not even if "Señor Soler lives to be as old as some of these elders or had as many workers as those that the residents of Cardona falsely claim he has." Apparently, too, it was not the first occasion that the *principales* had used "calumnies and falsehoods" to try and impede contractors from cutting wood. A recommendation was duly made to punish all those who had signed the complaint "so that in the future they will refrain from annoying without cause the attention of the authorities" (ibid. 1870).

In fact, many of the problems faced by the Inspección general laid with the indifference or outright hostility of local officials to the new forest laws. As Jordana y Morera (1891, 244-45) observed, "these measures and others like them . . . remained in reality completely useless due to the hostility or little zeal that provincial and municipal authorities exhibited in their implementation." Far from facilitating agents of the service, local officials held back their support or more often openly placed obstacles in their way. The state found its policies

frustrated by its own employees who were attracted by the opportunities for self-enrichment the new timber market offered them or who sided more with the interests of their own communities than with the state. A Ministry of Ultramar circular dated 30 May 1883 urged magistrates to expedite the cases of the many public officials charged with dereliction of their duties and to impose disciplinary measures on those found guilty of this “deplorable corruption” (Corte de Madera 1883b). Alternatively, others were admonished for not enforcing the laws stringently enough—(“that you have been interpreting the law crookedly and perhaps not fairly, granting excessive consideration”), of ignoring instructions, and of being excessively lenient towards *Indios* (*ibid.* 1884b). Jordana y Morera (1891, 278) considered that most provincial and district heads simply did not comply with the forestry regulations and issued licenses arbitrarily, giving free reign to commercial interests. All these amounted to a great deal of lost revenue that the colonial state was anxious to raise and that the forestry department could ill-afford to lose. The annual value of untaxed timber collected ostensibly for people’s own usage was assessed at P300,000, half of which was estimated to have come from timber that had been cut fraudulently. That is to say, the amount of illegally cut timber was nearly 50 percent greater than the total revenue of P102,712 generated by the *Inspección general de Montes* from wood in the financial year of 1889–1890 (*ibid.*, 275, 278).

Conclusion: Commercialism and the Regalian Doctrine

Attitudes towards the forest changed during the second half of the nineteenth century. No longer was wood viewed simply as a resource out of which the principal needs of material civilization were fashioned: utensils, furnishings, housing, churches, and means of transportation. It still met most of these requirements, although iron and steel were beginning to replace timber in certain usages. The notion, however, that the forest had worth and that wood was a commodity with a monetary value gave rise to a market in timber, one that might still have been largely domestic at this stage but nonetheless was driven by the notion of profit. This new commercialism was to be seen in

the timber yards of the Manila merchants, in the professionalism of local contractors, in the abuse of traditional village rights, and, above all, in state attempts to raise revenue from timber and forested lands. This increasing commercialization of the forest in the nineteenth century, more than any fictitious usurpation by the Spanish Crown at an unspecified point in the sixteenth century, led to a concerted attempt by the state to define, constrain, and then limit customary rights to land. The so-called Regalian doctrine that considers all land public until such time as the colonial state or its successor republics granted documented property rights needs careful reassessment in light of Spanish colonial practice as revealed in archival and contemporaneous secondary sources that clearly show customary rights were not so extinguished.¹⁵

If this commoditization of the forest was not complete by the end of the Spanish colonial period, and clearly it was not, the process that transformed it from so much wood into that much lumber was well underway. Nor did the nature of that market substantially change after 1898.¹⁶ Above all, the forest had come to be seen as inimical to development, the "enemy" of modern "man" and so required complete eradication to facilitate progress. To land-hungry migrants along the inland frontier of Central Luzon, as to many others at the end of the nineteenth and the beginning of the twentieth century, it was a simple matter: "settlers after settlers gauged their ingenuity against the forest land and soon the place once wild succumbed to civilization" (HDP Santa Ignacia, Tarlac Reel 72, 32).

Notes

Research for this article was partly funded by the Netherlands Institute for Advanced Study (NIAS) as a fellowship-in-residence 2003/2004.

1. On the Netherlands East Indies, see Boomgaard 1988, 1992; Boomgaard and de Bakker 1996; Peluso 1992. On Burma, see Bryant 1994, 1997, 1998; Keaton 1974. On India, see Grove 1995; Guha 1989; Ribbentrop 1900; Stebbing 1922–26. See also Tucker 2000. On forestry in the Philippines during the American period, see Roth 1983 and Tucker 1988, 1992. On the Spanish period, see Orillos 1999.

2. On arson, see Bankoff 1996, 73–75.

3. This figure may be overly conservative as Carla Phillips (1992, 80) reaches a

similar figure of 25,900 *codos* (1 *codo* = 56 centimeters) of wood equivalent to several thousand trees but for a smaller vessel.

4. The source does not specify whether this figure refers to the total number of people involved over the three month period or the amount of people required at any one time. The former is more probable.

5. On shipbuilding, see Bankoff, "Wood for War," forthcoming 2006.

6. American reports suggested that Cebu and Bohol were already largely deforested by the beginnings of the twentieth century (Worcester 1915, 5; Schneider 1916, 11).

7. On a history of typhoons in the Philippines, see Bankoff 2003, 41–47.

8. The whole question of the extent and rate of deforestation during the colonial period is discussed in Bankoff, "One Island Too Many," forthcoming.

9. A comparison of staff to forest showed that the equivalent service on Java in the Netherlands East Indies had three times more personnel (Jordana y Morera 1891, 286).

10. On *terrenos baldios* or *terrenos realengos*, see Lynch 1988, 87–88.

11. All land transactions were made subject to a single jurisdiction (1803), its purchase was facilitated (1813), limits were set to claims of possession to non-titled lands (1819), the disposal of a large tract of forest in Nueva Ecija was implemented (1858), and a set sale price of P50 a *quinion* was fixed (1862) (Vidal y Soler 1874, 67–68). One *quinion* is equivalent to 10,000 square feet or 3,048 square meters. This figure represented an enormous increase over the amount of half a peso per *quinion* set in 1769 (Jordana y Morera 1891, 233).

12. Cebu, Iloilo, Albay, and Bulacan are mentioned as markets of some importance (Vidal y Soler 1874, 32).

13. Ramon Jordana y Morera (1891, 252–253) witnessed many large beams abandoned thus on the coast of Unisán in Tayabas.

14. On rising anti-Chinese sentiments during the second half of the nineteenth century, see Bankoff 1996, 45–48.

15. The Regalian doctrine is enshrined in the 1987 Constitution. Article XII, Section 2 specifies that "all lands of the public domain . . . forests or timber . . . and other natural resources are owned by the state" On the Regalian doctrine in the Philippines, see Lynch 1991. I am in the process of writing an article on this subject detailing the retention of customary rights in the post-1565 period.

16. While the amount of timber cut increased markedly between 1918 and the beginning of the Second World War, exports still represented only less than a quarter of the total amount. In other words, three-quarters of the timber cut during the American colonial period still supplied the domestic and not the export market. Nor could the undoubted decline in timber imports, substantial though it might have been in percentage terms, explain such a phenomenon. Up to the financial year 1912–1913, imports exceeded exports (53,989 to 3,957 cubic meters, respectively). Figures for the following year, however, were reversed with 12,261

cubic meters imported and 40,154 exported. Subsequently, imports never exceeded exports again. By 1937, exports rose to 603,620 cubic meters, more than fifteen times greater than the 1912–1913 figures, while imports declined to 14,571 cubic meters, less than a fourfold decrease (Bureau of Forestry 1904–1937; Nano 1951, 83).

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