

# Empires of Forestry: Professional Forestry and State Power in Southeast Asia, Part 1

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## ABSTRACT

This paper examines the origins, spread, and practices of professional forestry in Southeast Asia, focusing on key sites in colonial and post-colonial Indonesia, Malaysia and Thailand. Part 1 challenges popular and scholarly accounts of colonial forestry as a set of simplifying practices exported from Europe and applied in the European colonies. We show that professional forestry empires were constituted under colonialism through local politics that were specific to particular colonies and technically uncolonised regions. Local economic and ecological conditions constrained the forms and practices of colonial forestry. Professional forestry became strongly established in some colonies but not others. Part 2, in a forthcoming issue of this journal, will look at the influence on forestry of knowledge and management practices exchanged through professional-scientific networks. We find that while colonial forestry established some management patterns that were extended after the end of colonialism, it was post-colonial organisations such as the FAO that facilitated the construction of forestry as a kind of empire after World War Two. As a sector, forestry became the biggest landholder in the region only after colonialism had ended.

## KEY WORDS

Forestry, empire, Southeast Asian history, agrarian change

## INTRODUCTION

Anyone crossing the land border from Southern Thailand into Peninsular Malaysia notices a shift from the anarchic and deforested Thai landscape to an orderly and more forested Malaysian landscape. Similar divergences even occur within national boundaries: as becomes clear when comparing forests in Indonesia's Borneo provinces to the forested areas of Java.<sup>1</sup> Such contrasts across and within national borders illustrate the importance of variation in the legacy of professional state forestry throughout the region.

In this paper we make two intertwined arguments, using a presentation of the history of professional forestry institutions in Thailand, Indonesia and Malaysia as illustration. First, we wish to qualify those historical accounts of colonial forestry that emphasise the emergence and spread of a set of common practices that are claimed to have refashioned forests in ways to make them legible, predictable and productive.<sup>2</sup> This view is based on an idea that there was an origin of the basic model for professional forestry (Germany/France) and that central powers in the colonial empires sent out directions and models to the periphery. We suggest some modifications to this approach. We will emphasise instead the variation produced by the ways that professional forestry was created in different localities, influenced in part by the geographically and historically specific politics, economies, ecologies and practices of producing knowledge and models about forestry. This allows us to conceptualise what we call 'empires of forestry': networks of knowledge, practice and institutions produced differently in different local contexts, and exchanged across sites through institutions facilitating this exchange. Our argument, in other words, is not just that there was considerable variation in professional forestry practices across the colonial empires, but that this variation is crucial to understanding how empires of forestry were constituted. In this paper we describe the institutional dimensions of professional forestry discourses, recognising that these empires were not only ideational and practical, but that they enabled governments and private interests to accumulate huge amounts of capital at the time of and since their creation, and also constituted the mechanisms for primitive accumulation through state appropriation of forest resources.

Our second argument is that as the colonial empires disintegrated after the war, the Food and Agriculture Organization [FAO] organised what was in effect a new global network of professional foresters who practised/implemented state forestry, thus constituting a new 'empire of forestry'. This new empire, more than the previous ones, was organised around a single model for legitimising professional forestry as a development enterprise based on state accumulation.<sup>3</sup> This empire had a much broader reach geographically and temporally – its early policies and practices are still shaping forestry practice around the world. Like its predecessors, the reach of the FAO empire was uneven. Its effects were strongest in sites where professional forestry had been relatively weak dur-

ing the colonial period. The FAO helped forestry departments transform these sites into important timber-producing zones and lay the basis for creating the political forests of the late twentieth century. Our term 'political forest' refers to lands that states declared as forests and put under the control of state forestry services.<sup>4</sup> This term is meant to emphasise that 'forests' are products of political as well as ecological processes.<sup>5</sup> The capital, technology and legitimising narratives that the FAO brought to this task helped national forest departments overcome the ecological, political-economic, intra-governmental and cultural obstacles that had deterred colonial-era foresters from creating major political forests in these regions.

The key reason for the success of the FAO project was that it was closely aligned with broader state projects to deepen territorial power and expand state revenues, as the creation of political forests during the colonial period had done in a more limited manner. It was the attraction of newly valuable forest resources that induced national states to look to forestry departments as key agencies for extending state control to areas where other control mechanisms had been ineffective. At the same time, networks among professional forestry institutions and individual foresters, dominated during the 1950s by the FAO, provided much of the knowledge, power and other means by which these previously marginally ruled areas were brought into the hearts of a global forestry empire – one which was truer to the 'legible' forest than that established by colonial empires.<sup>6</sup> The decades of the 1950s and 1960s were thus marked by a more successful and significant convergence in professional forestry institutions in Southeast Asia than had been the case under colonialism.

At the same time, professional forestry institutions continued to be shaped through local politics and contexts, often in ways that were unrecorded. Forestry was constituted through newly illegal practices as well as through new laws. Scientific (and macro-political) planning and management was consistently undermined by logging companies, the actions of people who lived in or used these new political forests, and other government agencies at both national and local scales. As a result, the new strength of professional forestry often turned out to be paper strength, based more on written scientific plans than control on the ground where challenges to forestry department controls continued. This odd contradiction between the failure of practice and the success of an idea – of both 'forests' as specific types of places and 'forestry' as a profession for managing these places – is fundamental to understanding many of the conflicts faced in 'forest areas' of the world today.

To better understand site-specific variation in professional forestry institutions, we have focused on Siam/Thailand, Java and Dutch Borneo (post-war: the four provinces of Indonesian Kalimantan) in Indonesia, and 'Malaya' (the peninsula) and Sarawak within Malaysia. Within Malaya, we examine both the core 'Federated Malay States' (FMS), and to a lesser extent, Kedah, an unfederated state where British rule was imposed later than in the FMS (see

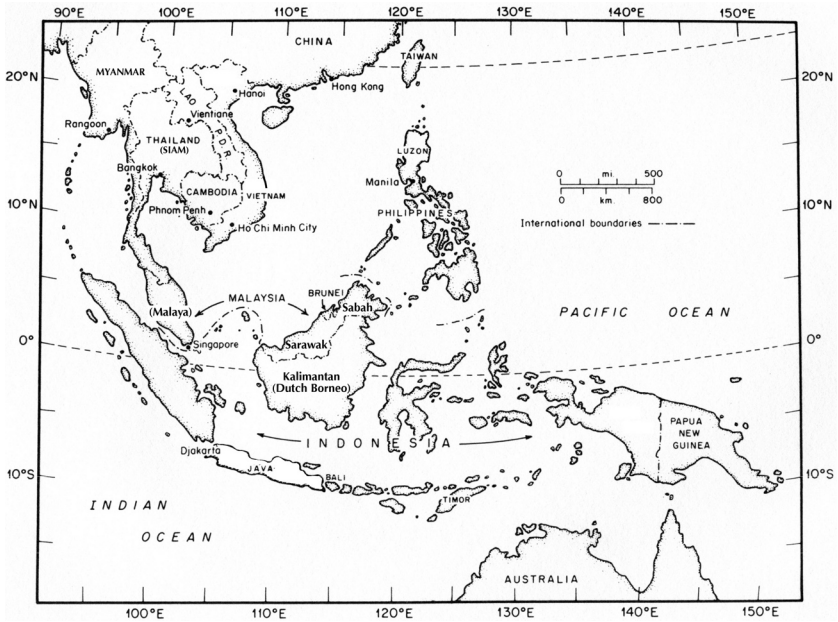


FIGURE 1. Map of Southeast Asia

Figure 1.) The time period of this study begins with the first institutionalisation of professional forestry in the region under the Dutch and British colonial empires during the mid- to late- nineteenth centuries. It ends with examination of the initial decades of post-World War Two influence of the Forestry Division (FD) of the FAO. In the next section we provide a brief background to the institutionalisation of professional forestry in these sites, before moving onto a more detailed account of variation in the constitution of forestry empires in the remainder of the paper.

## BACKGROUND

Much of the literature on the spread of professional forestry in the colonial empires emphasises how the profession has been shaped by training and participation in trans-empire networks of professional forestry.<sup>7</sup> More than this, the literature often assumes that there has been a single, dominant approach to professional forestry, developed in Germany, and disseminated through forestry networks. Rajan and Lowood both describe the core principles of German forestry as involving the creation of forest stands with minimum diversity to simplify calculations of wood volume; the maintenance of records to balance wood supplies and demands; and sustained yield production methods to enable

accurate calculations of future wood supplies.<sup>8</sup> Scott represents a particularly strong statement of this approach: he argues that for professional foresters, the ideal production forest was predictable and legible; ideal forests were thus mono-cultural, even-aged forest plantations.<sup>9</sup> He goes on to say that this German model, based on a radical simplification of forests, was hegemonic around the world by the end of the nineteenth century.<sup>10</sup>

Many of the foresters who ran the early forestry departments in our study region were trained in German and French traditions of professional forestry (discussed in Part 2). We argue that this approach to the history of professional forestry is important but limited. It reinforces the idea that professional forestry is primarily an undertaking in biological/ecological management. Most historical accounts of forestry are based on the assumption that it is primarily a kind of applied biology, that is, a profession based in biological techniques for managing forests.<sup>11</sup> Applied biology or ecology is certainly an important dimension of forestry. But forestry is also a political, economic, and even a cultural undertaking.<sup>12</sup> In particular, the emphasis on comparing global or colonial models for forest management has sometimes subsumed the site-specific politics of professional forestry. Combined with the networks and politics of empire, these forestry politics produced variation and helped constitute empires of their own, both connected to and separate from the political intentions of ruling governments. Insofar as there were commonalities in the practice of professional forestry across sites, moreover, these were based as much in common contextual factors as in foresters' participation in professional forestry networks for their training and work.

Some of the key issues in the politics of forestry included the increasing territorial control of forests, the struggle over budget allocations, the nature of control over the extraction of lucrative forest products (the forms of surplus extraction), and control of labour needed for more intensive forestry operations.<sup>13</sup> Of these, it is arguably territory that was often the most hotly contested. Foresters everywhere found themselves disputing with civil administrations and competing for territorial jurisdiction with agricultural and other resource management agencies. Even where successful, foresters had to continue to justify their control of extensive territories and resources to state administrators and other politically influential groups with interests in forest-based resources. Key budget issues often involved struggles to obtain financial support for establishing the institutions (research institutes, journals, etc.) and hiring the kinds of trained personnel that enabled the organisation's participation in empire and trans-empire forestry networks. We show in this paper that contextual differences in these struggles produced important differences in how professional forestry was institutionalised across our five research sites and over time, in intensity of participation in forestry networks, and thus in the development and operation of forestry empires. Similar variation has been meticulously documented for India by Sivaramakrishnan and for Germany by Radkau.<sup>14</sup>

We do not claim to be exhaustive in our account of professional forestry in these Southeast Asian sites. Our focus on politics means that we have backgrounded other important influences on professional forestry practice which deserve their own separate treatments. For example, we do not address in detail here how issues of national security, related to global forces such as the communist and nationalist movements of the 1940s–1970s, the growing international drug trade, religious movements, and resettlement of both international refugees and colonists/migrants of all sorts, influenced forestry in Southeast Asia.<sup>15</sup> We also do not address in detail how diverse forest ecologies influenced professional forestry, and the specific roles of professional forestry in the colonial and postcolonial economies. We have included a background section on ecology and economy, as they were important in shaping forestry politics.<sup>16</sup>

Before we begin our discussion, the following tables present some basic information on the different forestry departments in our study, information that will provide the basis for the remainder of this paper. Table 1 shows that the first government forest service/department in the region was established in Java. It was in fact among the first of the professional Asian forest departments,<sup>17</sup> along

Table 1. The Establishment of Selected Forest Services of Colonial-era Indonesia, Malaysia, and Thailand<sup>18</sup>

Site	Date Forest Service Established	Key Institutional Model	Number of Forest Service staff just before World Depression
<b>Java</b>	1808/1865 <sup>19</sup>	France/Germany	5969 (1929)
<b>FMS</b>	1901	Burma	580 (1930)
<b>Kedah</b>	1910	FMS	60 (1929)
<b>Siam</b>	1896	Burma/India	618 (1928)
<b>Sarawak</b>	1919	India/FMS	81 (1929)
<b>Dutch Borneo</b>	1939 <sup>20</sup>	Java	18 (1929)

Table 2. Per cent Change in Political Forests in Colonial and Post Colonial States<sup>21</sup>

*All figures are percent of state claimed terrestrial territory.*

Site	% Land Reserved by Government as Forest 1930 (approx.)	% Land Reserved by Government as Forest, mid-1980s	Increase in Percent of Land Reserved as Forest 1930s-1980s (approx.)
<b>Java</b>	17 (1929)	19.9	2.9
<b>FMS</b>	27.6 (1939)	24 (1976) <sup>22</sup>	-3.6
<b>Kedah</b>	27 (1939)	32.6 <sup>23</sup>	5.6
<b>Siam/Thailand</b>	0	42	42
<b>Sarawak</b>	0.8 (1929)	37.6	37.6
<b>DB/Kalimantan</b>	0.007 (1927)	82 <sup>24</sup>	82

with those in India and Burma, so that the only available models for practising professional forestry were those taught in continental Europe. By the time that forest departments were established in Malaya, Siam and Sarawak, however, professional forestry was well established in Java, India and Burma. The latter two, in particular, served as models for the departments established by British colonial foresters in peninsular Malaya, Sarawak and Siam.

Table 2 compares the areas reserved as 'political forest' near the end of the colonial period, and during the mid-1980s, when the area of state-controlled political forest reached its maximum.<sup>25</sup> Although foresters could not control all activities within these territories, the extent of formally constituted political forests indicates the strength of professional forestry as a state land management agency. The data suggest that by this measure, the most successful colonial forest departments emerged in Malaya (including both the Federated Malay States [FMS] and Kedah) and Java. The Siamese and Sarawak forest departments were relatively weak, while professional forestry in Dutch Borneo had little autonomous power.

After World War Two, the FAO helped newly independent states and states in transition from colonialism to demarcate political forests, increasing the political power of professional forestry departments vis-à-vis other government departments. At the same time, colonial forestry retained its hold in Malaya while expanding to transform forestry in Sarawak during the 1950s (see below). The combined effects of FAO's work in independent states and colonial forestry in Malaya facilitated the rapid growth of territorial control by forest departments in the region. However, legal power did not always translate into control on the ground, and in a few cases, the foresters' control of what went on in political forests was virtually non-existent. Most important for the purposes of this paper, however, is that by the 1960s all these states had passed legislation enabling state forest reservation, had established bureaucratic agencies based on the premise/promise of scientific management, and had made significant advances in the formal reservation/gazetting of political forests. In addition, all the regions we treat here were actively participating in international forestry networks established and led by the FAO.

## ECOLOGIES AND ECONOMIES

Our focus in this paper is on institutional forest politics. In practice, however, it is impossible to disentangle economy, ecology and politics, so that it is not possible to discuss politics without mentioning economy and ecology.<sup>26</sup> This section thus provides information on differences in the economies and ecologies across the five sites, as a background to the discussion of politics.

With respect to forest ecologies, the key point is that the great variation in types of forests and forest composition across the study sites contributed to dif-



ferences in the value of these forests at any particular time. Overall, forest value was a function of the combination of many factors including species composition, physical accessibility, cost of available extraction technologies, processing technologies and potential industrial applications of forest products. Forest value was thus dependent on the availability of investment capital, changing market demands, and competition for government support from other colonial extractive enterprises such as mining. From the point of view of colonial-era foresters, forests in areas that foresters eventually classified as everwet or rain forests had relatively low timber value due to high species diversity, low demand at the time for the sorts of wood contained in these forests, and low accessibility. This was the case especially in Dutch Borneo, Sarawak and Malaya. In the more robust economy of Malaya, however, these factors were mitigated by a strong local demand for wood for construction and fuel. In all these sites, these forests also contained many valuable non-timber forest products (called NTFPs today, then called 'minor' forest products), including resins, latex, rattan, tree fruits, bird's nests, animals, leaves, honey and wax. These were important for both local use and for export. Such NTFPs dominated the political economy of forestry in Dutch Borneo and Sarawak until after World War Two.<sup>27</sup>

During the period after World War Two, the accessibility of timbers from forests with high species diversity improved rapidly due to FAO technical assistance, new extraction and processing technologies, increased access of foresters to military reconnaissance technologies, the availability of investment capital, and significant subsidies from development aid. Demand for cheap construction timber for the reconstruction of Japan was an important factor at this time, first from the Philippines, then, in the 1960s, from Kalimantan.<sup>28</sup> These increasing forest values provided crucial support for foresters' arguments for obtaining state support for enhanced professional services and greater administrative and territorial power.

Java and Northern Thailand both had forests with concentrated teak stands. The geographies and ecologies of these stands also made teak relatively accessible. Teak grew only in elevations up to 400 metres, and in Thailand was often found close to streams and rivers. In Java, teak was even more concentrated and colonial management strategies led to plantation production.<sup>29</sup> Combined with strong domestic (in Java) and international (Siam) demands for teak timber, this meant that these forests attracted considerable European attention and political intrigue.<sup>30</sup>

Local economies affected state forestry institutions in two ways: by the role that forest products played in those economies and by influencing the fiscal capacity of governments to fund professional forestry institutions. With respect to the latter, the overall trend was that as state revenues increased through economic growth, foresters gained capacity and authority to demarcate and control political forests – even in territories which could not, on their own, produce a surplus from forestry. Within this overall trend, however, there was significant variation



among our study regions, in large part because of forest politics. Capacity to fund forestry was not always matched by the willingness to fund forestry.

Most importantly, during the colonial period the economies of the Malay States and Java were more diverse and commercialised than those of their neighbours. Both Java and the Malay States had significant industrial or mining sectors prior to World War Two, including tin in the Malay States, shipbuilding in Java, and at least first-stage processing of many tropical crops such as rubber, coffee, tea, indigo and sugar in both. These activities helped provide relatively predictable and substantial income to these states, which meant that they were in better positions to fund forestry than their neighbours. As importantly, the production and processing of these crops required timber for infrastructure (drying sheds, office buildings and railway ties) and fuelwood for energy.<sup>31</sup> Industrial development thus created local demands for forest products and increased incentives for supporting professional forestry institutions to manage their production and supply.

The economies of Siam, Sarawak and Dutch Borneo were less industrialised, although there was some hard rock mining in all of these jurisdictions, requiring timber for mine props and fuelwood. However, local demand for the forest products used for processing facilities, infrastructure or commercial agriculture was low compared to Java, the FMS and Kedah. In addition, state income and thus the capacity to fund the enforcement of forestry laws was often low, especially in Siam where international treaties limited the government's ability to tax commercial activities.<sup>32</sup> In Sarawak and Dutch Borneo, oil and later natural gas were of overwhelming importance to the extractive economy, but their fuelwood and timber needs could be satisfied without extensive forestry operations in the interior. Lack of technology, low timber value and difficult access to the interior also precluded profitable access to interior forests, except for the highly profitable trade in non-timber products.<sup>33</sup> Overall, colonial forestry in Sarawak and Dutch Borneo was important more for its contributions of NTFPs for exports than for the supply of forestry products for local economic activities. Taxing the trade in forest products was a less costly alternative to the allocation and taxing of territorial concessions for production and extraction.<sup>34</sup> The exception, of course, was the valuable and much contested teak of northern Siam. In this area, the central government in Bangkok took direct control over forest management in order to displace the power of local princes and pacify the British for whom these princes made access to teak far too anarchic and unpredictable.

As discussed in Part 2 of this paper, after World War Two, all states in the study region embarked on programs, many supported by new sorts of international funding and assistance, to promote rapid economic growth, although these programs were delayed in some cases by war, political instability and varied ideologies about foreign investment. The ultimate result – although not immediately realised in all our cases – was increased state willingness and capacity to develop and fund professional forestry departments.

Although economy and ecology were thus clearly important influences on the institutionalisation of professional forestry, political support for scientific forestry, as measured by staff levels or the extent of political forests (Tables 1 and 2), did not follow mechanically from its role in the economy. Overall, variation in professional forestry practices on a regional level was closely related to the nature of state power, the different configurations of local politics in the different sites, and the way that these politics were mixed up with local economies and ecologies. Political differences in turn shaped the ways that forestry departments were integrated – or not – into empire-based forestry networks. The remainder of this paper is devoted to outlining the differences and similarities in local (site-specific) forestry politics, and their influence on the making of forestry empires.

## FOREST POLITICS

As colonial governance became increasingly bureaucratic, and as the discourse of governance became more and more tied up with welfare, the expanding territorial claims of forestry departments and the resultant displacements of local people were increasingly difficult to justify. In addition, other land management or resource extraction agencies (for example, agriculture and mining) came into conflict with forest departments and their competing territorial ambitions. The relations of these forestry departments with other agencies within their own governments is thus crucial to understanding variation in professional forestry across our research sites. These relations were often extremely complex, involving, for example, procedures (and permissions) for forest reservation, the allocation and management of forestry revenues, the formal and practical subordination of local (district) forestry officials to local civil administrators, and so on. We can only touch on some of the more important features of these relations, as a way of showing how they contributed to shaping the practice of professional forestry in Southeast Asia.

As we stated above, territory might well have been (and still be) the most contested of all the resources necessary for professional forestry practice. Even intense struggles over state budgetary allocations often pale in comparison with those around territory or jurisdiction, especially in situations where growing state revenues make the funding necessary to practice professional forestry a relatively minor expenditure – and where forestry activities could fund themselves and produce surpluses for other sorts of investment, including the support of less profitable forestry activities such as conservation. Territory is finite, and many other government and non government actors competed with forestry institutions for territorial control, as manifested in struggles over forest reservation. The practice of professional forestry, therefore, includes the political strategies through which foresters and forestry institutions try to maintain territorial

control. Discursive strategies to relate the importance of professional forestry are intended to persuade the public and other government agencies to allocate financial resources and territory to forestry departments, in part by normalising the state forestry department's role within the administration. Public Relations, once called 'propaganda' is still included in forestry school curricula around the world as a core subject. The importance of persuasive discourses during the colonial period becomes apparent in browsing the pages of forestry publications such as *The Malayan Forester* and *Tectona*.<sup>35</sup> Its continued importance after World War Two can be gauged by the many discussions of public education and propaganda in the FAO's forestry journal *Unasylva*, as well as in national forestry journals such as *The Indian Forester*, *The Malaysian Forester* and *Rimba Indonesia*. Professional forestry and its territorial claims were also debated during the colonial period in nonforestry journals such as *De Indische Gids* and the *Journal of the Malayan Branch of the Royal Asiatic Society*.

Foresters used a variety of strategies to argue their cases, although they usually drew on a small number of themes regarding the benefits of professional management of forests.<sup>36</sup> The specific ways that foresters used these themes varied according to political and economic circumstances. Their most important argument was that investments in production forests would produce direct financial returns to the state in the long run through the increased supply of timber, firewood and other forest products, as well as producing rural employment and income. The benefits of conservation provided a second key argument, though one of greater importance to foresters themselves than to government officials. Thus, foresters found it necessary to link conservation arguments to financial arguments and arguments about the value of upland forests to lowland agriculture. Protected forests were portrayed by foresters as crucial for protecting water and soil sources for lowland agriculture and microclimate regulation.<sup>37</sup> In some cases foresters' arguments for territorial and financial support moved beyond the direct financial and ecological benefits, associating forestry with advances of civilisation brought by colonial government, the advance of scientific knowledge, or the development missions of late colonial states. During the period we focus on here – up to the 1970s – arguments in terms of 'biodiversity' had not yet emerged, although there was some colonial concern with species protection.<sup>38</sup>

Despite the territorial aspirations of other land management departments, the most important competitor with the forestry department was typically the civil service, which we define as those agencies whose mandate concerned the administration of people. Many, if not most forests in Southeast Asia were in some way claimed and had been used by local populations concurrent with or prior to colonial interventions.<sup>39</sup> People living in forested areas frequently undermined forestry laws through evasion, theft and/or cutting and burning swidden fields where these were forbidden. Although professional foresters created a political 'forest' category and criminalised these subsistence activities

within political forests' bounds, local users sometimes had powerful supporters elsewhere in the government, especially civil administrators whose concern was the administration and welfare of people losing access to forest and land resources. Civil administrators were often ambivalent or downright opposed to foresters' intentions to displace people and their subsistence activities from newly reserved forests, and to push for laws restricting local people's cultivation rights and access to forest products for subsistence and trade. At the same time, civil administrations supported certain forest department activities because they stood to gain in terms of revenue and power from these activities.

The relationship between the forest department and the civil administration was also crucial because the civil service was almost always very influential both in central policy-making and in the local administration. At the local or district level, civil officials – police as well as district and sub-district officers – played direct roles in the enforcement of the forestry departments' claims to territory and forest resources. In most of the sites we treat here, district-level civil service officials controlled the investigations of local forest claims during the settlement process, before the formal reservation of forests. After reservation, district-level administrators or the police, both part of civil administration, were often enlisted to assist in forest protection/guarding activities. This was particularly the case during the years before forest guards were accorded police powers (e.g., power to arrest, power to levy fines). Forest guards or police often had limited capacity to monitor or control the activities of people in both remote and heavily populated forest areas, so the forest department often depended on civil authorities – including the civil police departments – for information on illegal activities in the forest. Contradictions arose, however, when civil administrators or police conceived of the foresters' daily activities as antithetical to the interests of the local people – including, sometimes, themselves as villagers tied to other villagers through kinship.<sup>40</sup> Things became even more complicated when forest police, rangers or other field-level forest service employees were related to village, sub-district and district heads. Finally, forest departments often depended on civil authorities to recruit labour for their silvicultural activities, or to create the kinds of conditions that facilitated the recruitment of forest labour – e.g., the imposition of money taxes. Thus, the forest services and civil services were wrapped up together at multiple levels during and after the time that forests were reserved as state property under the forest department's jurisdiction. Importantly for our argument, there was considerable variation in the specific ways that this relationship was articulated across our different sites, and over time. The complex relations between civil authorities and foresters often defy easy classification, except perhaps as ambivalent, arbitrary and fragile alliances.

At the same time, the degree of political support that civil authorities provided professional foresters paralleled and helps explain our division of these cases into strong and weak forest departments during the colonial period. On the whole, and despite ongoing conflicts over many issues, forest departments

in both Java and The Malay States developed working relations with and some autonomy from civil authorities. The interests of forest departments or forestry officials in Siam, Sarawak under the Brookes, and Dutch Borneo were more subordinated to those of local civil authorities. As we show below, strong political support for forestry departments can be partly but not entirely explained by state fiscal capacity and the economic value of forests. After World War Two, this division into weak and strong departments began to fade, as forestry departments in Thailand, Indonesia and Sarawak were much strengthened in their attempts to control territory. In various combinations this control was due to the escalating value of tropical timbers, national government's intentions to take advantage of their abundant 'subsidies from nature', the realisation that the reservation of forests extended the reach of state power, and the availability of international assistance through international professional forestry networks, in particular the newly formed FAO-Forestry Division. In the former FMS and Kedah, meanwhile, the status of professional forestry declined as the forest department found that many of the reasons for its good working relations with civil authorities (outlined below) disappeared, and as the economic value of lowland forests was challenged by the increasing political and economic values of alternative land uses.<sup>41</sup>

In Java, although political support for professional forestry within the civil administration during the late colonial period was quite strong, this support was not unqualified, and it fluctuated over time and produced many volatile debates. For example, there had been a Forest Board in Java under Daendels, as mentioned above, but between 1826 and 1865 virtually no independent forest service operated. Only one district (residency), Rembang, even had professional foresters working for the residents, under whom forest administration fell. During Java's notorious 'Cultivation System(s)' (1830–1870<sup>42</sup>), teak was the 'crop' delivered by village quota in residencies with major teak forests. Forest labourers (*blandong*) cut teak and were forced to establish plantations in a system that lasted until 1865. The Residencies (territorial divisions of the civil administration) received some of the revenue from these leases. Labour quotas were established per village; village heads were responsible for making sure these quotas were met by all village landowners. These *blandong* also had to build logging roads and provide the draught animals for pulling logs.<sup>43</sup> Forest management and the extraction of forest products, in other words, were achieved through local-level civil administrators rather than through a forestry department working on lands under their jurisdiction or one that granted concessions to specialised forestry enterprises.

The advent of liberal political forces and 'liberal' colonial political-economic policy at the end of the Cultivation System in Java was linked to important laws facilitating colonial enterprise. The 1865 Forest Regulations<sup>44</sup> called for the establishment of a Forest Service and the creation of political forests, dividing the forests of Java into three categories – teak under government conservancy

(as Boomgaard calls it<sup>45</sup>), unregulated teak forest, and Junglewood forests. The conservancy teak forests were leased out to private and government enterprises, the rest was available to local authorities and people, as well as to industry. The Junglewood Forests were meant primarily for protection, but were the least heavily guarded and the most easily accessible to local people.<sup>46</sup> Forest boundaries were permanently demarcated and mapped, starting with the most important teak forests in 1887. The last Junglewood forests were demarcated by 1929.<sup>47</sup> After 1865, the Forest Service leased teak timber concessions to private industries or government services, which employed 'free' labour to cut timber.<sup>48</sup> Private concession holders paid a tax on the estimated amount of the timber in the concession and on the length of the lease.

Interestingly, there were ways in which forestry was autonomous and yet structurally integrated into other government bureaus. The Forest Ordinances were separate from Agrarian Law, the Forest Service (*Boschwezen*) had its own professionals, trained in forestry technical schools on Java and colleges/advanced courses in the Netherlands and Germany (see below). Early on they were part of the Administrative or Civil Service (*Binnenlandsch Bestuur*), and later were moved to the Department of Agriculture, Industry and Trade. Being part of this latter group in fact gave them more power, it could be argued, both because of their increasing autonomy and because other land management (agricultural) officials saw the direct value of forests and forest products to their own jurisdictional interests.<sup>49</sup> The forest police on Java, formed in 1880, remained a part of the *Binnenlandsch Bestuur* until about eight years after this first change, but were later moved to the Forest Service. When they were given the power to arrest people for forest crimes, both their legitimacy within the administration and their power on the ground increased. All police forces were still expected to cooperate to control the population, partly because forest police only had the power to arrest people who had committed 'forest crimes'. In order to convict and punish them, they needed the civil police and the justice department.<sup>50</sup>

The political shift to the Ethical System around the turn of the twentieth century coincided with foresters' growing alarm at the teak forests' degradation due to the private companies' poor cutting practices during the Cultivation System.<sup>51</sup> Two major things happened. Conservation arguments were more frequently used to expand and intensify foresters' jurisdiction over upland forests – mostly in the Junglewood category. These hydrological, climatological and broad social welfare aspects of upland watershed forests were written into law in 1927 – laws which promised protection of lowland rice production lands and were used to justify the Service's expansion. Even though they faced counter-discourses (from both the proponents of the Ethical System, the budding communist party, and the growing nationalist movements) that depicted forestry and foresters as land-expropriators, foresters expanded their staff (before the Depression), and became the largest landholding unit in Java.<sup>52</sup> Government foresters also assumed direct management of forests, ending private concessions.

Civil administrators were trying to make villages more self-sufficient in rice and other foodstuffs, and trying to figure out ways the villages could shoulder the costs of their own development. Foresters argued that they were providing more employment opportunities (through seasonal labour and reforestation projects), all the while enclosing nearly a quarter of Java's land, and monopolising the timber and firewood sectors.<sup>53</sup> Through the 1930s, the Forest Service continued to acquire 'critical lands'.<sup>54</sup>

In post-independence Java, there was virtually no question that state foresters would regain control of the forest lands. The 1927 Ordinances for the Forest Service of Java and Madura were declared to still be valid and translated from Dutch into Indonesian.<sup>55</sup> Indonesian and Dutch foresters returned to manage Java's forests, some even during the Indonesian Revolution, although there were some tensions between the foresters who had served under the Japanese administration during the 1942–45 occupation and those who had not.<sup>56</sup> Indonesian foresters regarded the forest maps made in the Dutch period as legal documents and used them as a basis for checking forest boundaries. The Directorate General of Forestry was then part of the Ministry of Agriculture and Agrarian Affairs. Until 1957, all forest management had been centralised; in that year, some responsibilities were devolved to provincial forestry services.<sup>57</sup> Some of this provincial power was later withdrawn when the Directorate of Forestry was reconstituted as a State Corporation, but a discussion of this is beyond the scope of this paper.<sup>58</sup>

In peninsular Malaya/Malaysia, political support for professional forestry was strong during the colonial period, but, as in Java, there were significant changes in the strength and nature of that support over the colonial period. The period prior to World War Two was something of a golden period for Malayan forestry: British foresters in the Malay states were among the most successful in the region, if not the British Empire, at convincing their governments of the need to reserve forests and allocate funds for hiring large numbers of professional foresters and subordinate staff. The strong position of the forest department was evident in its use of financial arguments to defend against recommendations to reduce forestry spending by two Retrenchment Commissions, first in 1922, and again in 1932. For example, the Depression-era 1932 commission noted that 22 per cent of all senior forestry staff in the British colonies were employed in the Malay States,<sup>59</sup> and recommended a drastic scaling back of forestry personnel and activities, but the colonial government in the FMS rejected these suggestions.<sup>60</sup>

Strong colonial government support for the forest department was facilitated by robust state revenue from the highly commercialised economy, and by the way that timber supplies were a crucial support for that economy. On closer examination, the support for further forest reservation could not have been motivated by short-term timber demand alone, as there was no lack of timber available from extensive areas of unreserved 'state' forests. The department's



success in expanding the area of Reserve Forests was also based on a coincidence of political priorities related to the transformation of Malay agriculture. The civil administration in the Malay States wanted to contain Malays to lowland wet rice cultivation areas for a variety of reasons: to improve state-level food security and eliminate rice imports, collect land taxes, suppress banditry, prevent English and Chinese rubber plantations from being undercut by low-cost rubber from peasant's swidden fallows, and to realise their ideological vision of turning Malays into proper yeoman smallholders.<sup>61</sup> The question of rubber may have been the crucial priority: Rubber was introduced into region around the turn of the century; the very large plantations were owned by British companies such as Dunlop; and smaller enterprises were generally Chinese.<sup>62</sup> To protect British investors, the government adopted a wide range of policies aimed at restricting the ability of Malays to cultivate and sell rubber, including policies banning swidden cultivation.<sup>63</sup> Forest reservation reinforced – and benefited from – these policies.

As in Java, large areas of reserved and unreserved forests were cut during the Japanese occupation, but after the war the Forestry Department quickly resumed its arguments for strict controls over forest territories. The Malayan Silvicultural System, which was meant initially to regenerate forests cut by the Japanese, exemplified how silviculture techniques are not just about managing forests but can also be political acts aimed at persuasion. The forest department promoted this technique in part because it provided a scientific rationale for expelling cultivators who had occupied many forest areas during the war.<sup>64</sup> Equally important in the reassertion of Forestry Department control was the British approach to counter-insurgency during the Emergency, which lasted through the 1950s. Violent opposition to the government launched by the Malayan Communist Party from cover provided by interior forests ('jungles') was met in part by resettling forest villagers into lowland areas.<sup>65</sup>

While the Emergency enabled foresters to consolidate control over upland forests, their control over lowland forests was eroded, first by the need to provide land for resettlement of people from forest areas, and later by the strongly pro-Malay policies of the newly independent government after 1957. The Emergency, and independence from British colonial rule in 1957, marked the end of restrictions on the expansion of Malay rubber. According to our interviews in the state of Kedah, the 1950s and 1960s was a period of rapid expansion of smallholder rubber. This expansion was primarily in forested areas designated as 'state lands' that were not yet formally gazetted as state forest, although documents in the state archives of Kedah also show that forestry officials were besieged with requests from Malay peasants to excise land planted in rubber from Reserve Forests. Beginning in the 1960s, large areas of reserved lowland forests were degazetted to provide land for resettlement and development schemes.<sup>66</sup> This is why Table 2 shows a decline in Reserve Forest area for the four states (*Perak*, *Negeri Sembilan*, *Pahang* and *Selangor*) which made up the FMS during the

colonial period, although Reserve Forest area in Kedah increased due to rapid reservation of upland and border forests during the Emergency.

In Siam, the Forest Department was weakened through much of its history by its subordination to a Ministry of Interior unsympathetic to the department's territorial and professional ambitions. Attention to both the central government and the provincial administration are important to understanding how Ministry of Interior officials continued to confound attempts to practice professional forestry throughout the period under consideration in this paper. At the national level, the Forestry Department was in the Ministry of Interior (which was basically the civil administration) until 1921, making both its budget and day-to-day operations subject to the Ministry's approval. The Ministry of Interior opposed laws enabling forest reservation because of their potential impact on local people's access,<sup>67</sup> and had no interest in facilitating investment in scientific forest management.<sup>68</sup> The Forestry Department's attempts to monopolise forestry were also undercut by international politics. Because most teak logging concessions involved foreign companies, their very existence was charged politically. The government had to balance a variety of political pressures, including frequent complaints from British, French and other companies, conveyed through their respective ambassadors, over the ways that concessions were awarded, concern about collusion between the British foresters in charge of the RFD and the British logging companies who dominated the industry, and pressure from local elites in the North for access to more income from logging concessions.<sup>69</sup> As a result, the King, his cabinet, and the Minister of Interior (Prince Damrong, whose power was exceeded only by his brother the king) participated directly in many decisions involving logging concessions and other forestry matters.<sup>70</sup> Evidence of the frustration felt by professional foresters in Siam during the early years of the department at this lack of autonomy is provided by the department's first director's (Mr. Slade's) fifth and last annual report to the government before leaving his post: in this report, Mr. Slade complains that the Ministry of Interior appeared to consider him as a junior clerk in the Ministry of Interior, and that the Ministry of Interior wanted too many day-to-day details about the workings of the department. He finishes with what can only be considered a veiled threat that continued lack of autonomy for the British-controlled Forestry Department could compromise Siamese efforts to avoid a direct takeover by Europeans through internal reform: he notes that his appointment was known around the civilised world, and that only the Conservator knows what measures should be adopted in the interest of forests. But the British Foresters who ran the department during its first few decades were unable to persuade the government to give more control over forests to the Forestry Department in the face of the politically charged conflicts around forestry.

It was only in the 1920s that Siam's Forestry Department began to gain a measure of autonomy from the Ministry of Interior. The increasing independence of the Forestry Department was marked by its transfer out of the Ministry

of Interior to the Ministry of Agriculture in 1921–22,<sup>71</sup> reducing the formal role of the Minister of Interior in forestry matters. Archival documents show that the Forestry Department first received funding for a silvicultural position in 1927, and funding for a silvicultural programme including taungya for replanting teak in 1929.<sup>72</sup> The Ministry of Agriculture, in effect, was more sympathetic to professional forestry understood as a form of crop management, even if it meant cutting into local people's access to forests. As important, during the 1920s the government instituted regulations enabling logging concession applicants to approach the Forestry Department directly, rather than using other political channels. It is likely that these moves were made possible because the threat of direct colonisation was receding during this period, allowing the Siamese government to assert more independence from British political pressures in sensitive matters like the allocation of logging concessions to foreign companies.

Despite some increase in Forestry Department autonomy, opposition from the Ministry of Interior helped to block the Forestry Department's proposals for forest reservation legislation until 1938.<sup>73</sup> When enabling legislation was finally enacted, moreover, it mandated complex procedures for informing and obtaining approvals from villagers, while giving control over this process to committees controlled by provincial-level Ministry of Interior officials.<sup>74</sup> In addition, and unlike the Malay laws, the enabling legislation borrowed the less restrictive category 'protected' forest from Indian forest laws,<sup>75</sup> which allowed for non-destructive uses of the demarcated forests. Pressure from the Ministry of Interior also led to regulations accompanying these laws which qualified the strict restrictions on local people's access to Reserve Forests with provisions allowing for certain low-impact livelihood uses. As a result of the complex procedures, and the control of local Ministry of Interior officials over investigations into forest use prior to gazettelement, forest demarcation proceeded slowly for several decades. Much of the forest that was demarcated was categorised as 'protected' rather than 'reserve' forest.<sup>76</sup>

In the early 1960s, however, FAO influence (see Part 2), escalating timber values and an authoritarian military government produced conditions that led to legal changes reducing requirements for local consultation prior to gazettelement, and eliminated Ministry of Interior control over forest use investigations. Forest reservation accelerated through the 1960s and 1970s, and Protected Forests were converted to the more restrictive Reserve Forests, producing the high levels of reservation shown in Table 2.<sup>77</sup> Somewhat counter-intuitively, rapid reservation did not immediately produce more forest department control over political forest territories in the case of Thailand. A good part of the explanation lies in the unchallenged local power of the provincial governors over land and forest use through the 1970s. These governors were civil officials who replaced semi-autonomous local rulers at the turn of the century and inherited much of their overarching local power, including control over provincial forestry officials.<sup>78</sup> During the pre-World War Two period, prior to forest reservation, many detailed

decisions about forest management required approval from the governors.<sup>79</sup> This process contributed to the lack of independence in forestry management decisions that had so upset Chief Forester Slade. Accelerated forest reservation during the 1960s and 1970s should have given the forest department exclusive control over reserved forests, but in practice these forests were administered by provincial forestry officials, who were subordinate to the provincial governors. Provincial-level administrators facilitated rapid occupation of many Reserve Forests by cultivators, even organising them into villages and collecting land taxes, all in contradiction to Reserve Forest laws.<sup>80</sup> Provincial forestry officials could do little to prevent this occupation, let alone to obtain support for removing and resettling existing inhabitants of these forests. The contrast with the situation across the border in Kedah, Malaysia, where whole hamlets were evicted from upper watersheds and resettled by the military during the Emergency, is obvious, and helps explain the landscape contrast that we described in the first paragraph of this paper. Only in the 1980s was the forest department able to finally counter the influence of provincial administrators through the reclassification of Reserve Forests as protected areas. These were administered directly from Bangkok, and helped the Forestry Department evade the provincial governors' influence on the administration of Reserve Forests.

In Dutch Borneo, colonial-era foresters found themselves in an even more difficult situation than Siam vis-à-vis the kinds of colonial control held by the Netherlands East Indies civil administrations. The modes of rule in so-called Dutch Borneo were an amalgam of treaties and arrangements with various local rulers in these areas, which had the effect of limiting Dutch authority. Dutch interest in the interior was more for political security – protecting its claims to the region against the British and Brookes – than for economic access to land. Forest products in the interior, including the timbers, were not considered worth the political or economic costs of trying to control them. Opposition of local people kept military involvement at a premium, and discouraged forest reservation.<sup>81</sup> Finally, the creation of the People's Council or Volksraad as part of Ethical Policy politics constrained Dutch territorial intentions in ways far different from Java. Thus, in the 1930s, while Java's forest service expanded reservation activities into the upland forests, the territorial basis of professional forestry in Dutch Borneo was diminished, in part by both local civil administrators and members of the People's Council, who questioned the legal validity of the *Domeinverklaring* (Declaration of State Domain) for all the Outer Islands.<sup>82</sup> This centrepiece of Java's Agrarian Act of 1870, opponents said, had been declared at a time when the NEI had a more tenuous relevance to the Borneo territories and disputed the Act's jurisdiction there.<sup>83</sup> These political obstacles augmented the economic and ecological constraints on professional forestry discussed in the previous sections, especially the prohibitive costs of establishing Java teak-forest style of territorial controls in the vast mixed lowland forests of Borneo. While the relevance of the Act was eventually established, the political forest

in Dutch Borneo was extremely small in comparison to the vast area of forest vegetation Borneo.<sup>84</sup> Although there was a forestry office in Banjarmasin for the region, their few staff and limited projects were subsumed under the NEI forest service, thus they had neither significant local presence nor power.

The early years of forestry in post-war Kalimantan, like the late years of Dutch colonialism, were taken up by botanical explorations and 'forest' measurement. Only a small percentage of land outside Java and Madura had been actually controlled by the colonial government as late as the 1940s. The majority had been held by *Daerah Swapradja* (autonomous regions) and customary groups (mostly *rakyat hukum adat*). From 122 million ha. of forest cover in all of Indonesia outside Java-Madura, only 10 million had been designated permanent forest by 1939.<sup>85</sup>

Despite the minimal formal or practical control of forests in the Outer Islands (including Kalimantan), foresters' activities during the 1950s and early 1960s under Sukarno's 'Liberal Democracy period' and 'Guided Democracy' were crucial to laying the basis for subsequent national forestry department power.<sup>86</sup> A telling discussion in this regard is provided in the GOI's own forest history (1986), which demonstrates the drive to acquire a territorial basis for forestry in the Outer Islands. For example, the changing divisions of the Forestry Department illustrate how forestry was changing. From 1950 to 1956, they went from talking about forest estimations (*pengakapan*) to establishing a division of agrarian affairs to handle (from within the department) land disputes on forest land. This was a practical territorialisation of administrative responsibilities, as the division of agrarian affairs deals with all land issues: disputes, excisions and additions. Similarly, the responsibilities of the Forest Administration Division evolved from 'opening forest territory' in 1950 to 'forest territorial policy/politics' in 1951, and 'exploration' in 1956. Forest measurement and mapping were also under their jurisdiction by 1951.<sup>87</sup>

The national ideology of resource management for the sake of national development and modernisation in the early 1950s both implied and created an alliance between civil administrators and foresters working to build a new Indonesia. This alliance was a product of the heady discourse of nationalism and nation-building that followed the end of the Japanese occupation and the successful anti-colonial movement that had led to the establishment of the republic of Indonesia in 1950. The constitution of the new Republic stated that the natural resources of the territory were to be managed by the central state and utilised for the greatest good of the people of Indonesia. While the interpretation of this mandate changed radically over time, in the 1950s these words clearly reflected the willingness of civil officials and various land managers to work together to both exploit and manage the new nation's vast forest estate. This, in effect, meant the legal creation of political forests outside of Java-Madura. While a Directorate General of Forestry under the Ministry of Agriculture and Agrarian Affairs was given jurisdiction over all forest land, it was as yet un-

clear just where those forest lands were in much of the Outer Islands. Forests in many places, including Kalimantan, were of many different sorts, reflecting the different ecologies, the various forms of colonial rule and the potential for profitable exploitation.

Through the 1950s and early 1960s, the formal jurisdiction of district or provincial governments over forestry was eroded in favour of centralised (national) professional forestry control. In 1951, a committee was formed to unify the diverse forest laws of the areas outside Java-Madura, and another one to create guidelines for a new Forest Service to work in the Outer Islands' forests. In 1957, the government issued an order (Presidential Decree. # 64, 1957) which mandated some provincial jurisdiction over forest resources. However, in practice these regional Forest Services only implemented the plans that were made by the central forestry planning offices in Jakarta or Bogor.<sup>88</sup> To support the idea of national forests, foresters argued that beneficial impacts of forests were not limited to the administrative district within which they were found – and that people living within forests were thus part of the national picture.<sup>89</sup> After a major national meeting in 1961, it was decided that forestry should be a national enterprise, not provincial. The nation would have a Central Forest Service and a National Forestry Enterprise. The CFS would do planning, conservation work, education and administration. The NFE was to be a coordination agency for the parastatals (government forestry corporations) of Java and Kalimantan, which directly managed forest production. The CFS and NFE took over all provincial tasks and property and controlled all personnel, including those assigned the task of public relations.<sup>90</sup>

Centralisation during this period was contested and not inevitable. The idea of forest decentralisation had been strong in the late 1950s, but some political forces were resistant. It is likely that the problems caused by the regional uprisings of the late 1950s, some of which were forest or 'jungle' based, lent support to the centralising forces within the sphere of forestry. Changing political fortunes of the foresters were also bolstered by climatic events. Major floods in 1960 caused major financial losses, which foresters blamed on 'arbitrary' land clearance and inappropriate cultivation techniques. Conservation arguments were once again used as a means of increasing the power of the Forestry Department.<sup>91</sup>

The expanding capacity of the forestry service outside of Java-Madura was marked by the literal explosion of forestry employees during the 1950s. By 1958, some 6000 of the 19,000 regular workers in the forestry service were in the Outer Islands. Kalimantan had 1,031 foresters by 1958, up from just 17 at the end of the Dutch period.<sup>92</sup> The growing power of professional forestry in the central government was indicated by the rising institutional status of the forestry service. In 1964 the government established a National Department of Forestry, under the Department of Agriculture and Agrarian Affairs.<sup>93</sup> The first Minister of Forestry, appointed later that year, was Soedjarwo – a major promoter of national-level forestry.<sup>94</sup> A year later, however, under the new government of

Suharto, the status of forestry reverted to that of a Directorate General – under the Minister of Agriculture, but still led by Soedjarwo, now Director General.<sup>95</sup> It was not until 1983 that forestry was elevated to independent ministry status.

The establishment of the Ministry of Forestry gave it a great deal of power in relation to both the Ministry of Agriculture and the civil administration. By the 1980s, more than two-thirds of the national territory was under the formal jurisdiction of the Ministry of Forestry. This was unprecedented in Southeast Asia. Most of this land was in the Outer Islands, including 70 per cent of the land in Kalimantan.<sup>96</sup>

With the immediate increase in investment in the forests outside of Java after 1967 and because of its vast store of forest resources, Kalimantan came to dominate the booming Indonesian forest sector first and for the longest time. By 1990, 294 of Indonesia's 561 concessions were in Kalimantan: most were located in East and Central Kalimantan provinces.<sup>97</sup> Simply defining, then allocating land to be reserved as permanent forest (*kawasan hutan*) – i.e., creating the political forest – thus gave the forestry sector unprecedented power in what was formerly Dutch Borneo.

In Kalimantan, professional forestry found expression in highly elaborate land use exercises that were carried out by various land management agencies. At the local level, however, foresters were not necessarily able to translate this into autonomous control over forest resources. Foresters had little direct or actual control over the military branches with timber concessions and civil administrators who had interests other than implementing sustainable logging or conservation plans. Some foresters collaborated in corruption, a much easier alternative than enforcing legal controls.<sup>98</sup> Foresters, civil service officials and members of the military who protected the companies' operations were commonly known to be corrupt. Indonesian foresters frequently referred to their institution as 'the golden ministry', and with good reason.

It became clear that benefits from the national forests were attainable by civil officials and regional foresters through both legal and illegal transactions. Thus forestry as an enterprise continued to be supported by civil officials but primarily for their personal gain. In practical fact, this meant that 'the people' were no longer a dimension of governmental debate, as they were replaced by a development ideology that emphasised the creation and appropriation of surplus rather than local welfare. Villages that existed in these regions before forests were superimposed on the legal landscape were legally ignored – and sometimes kept off the forest maps. Eventually, however, as in Thailand and Malaysia, logging or other forms of clearing in areas designated as 'conversion forest' led to the transfer of some lands from the jurisdiction of the Ministry of Forestry to other land management agencies. This type of transfer did not start to happen until the 1980s, and is beyond the scope of this paper.

Overall, the example of Kalimantan demonstrates the irony of professional state forestry. On the one hand, the land use planning and other development



exercises were intended to render landscapes and subjects visible, legible and 'sustainable'. On the other hand, the actual practices of foresters (and others) were often illegal and intended to produce illegibility and obfuscation. Hence, 'corruption' is an accurate term to describe their behaviour – meaning, corruption of the ideal model of professional forestry practice as the scientific management of forests for the long-term national interest.

Like Siam and Dutch Borneo, the Sarawak forest department's weakness in relation both to the civil administration and the actions and power of 'local people' helps explain the low level of reservation prior to World War Two (Table 2). Forest demarcation in Sarawak was initiated by an Order published in April 1920, which 'provided for the constitution and maintenance of Reserved Forests'.<sup>99</sup> Foresters began gazetting permanent forests right away, but only succeeded in claiming 5.5 per cent of the colony's total area by the beginning of the Japanese Occupation.<sup>100</sup> The Brookes' administration was sensitive to native claims, and the local people's unease over forestry activities worked against foresters' territorial aspirations. Foresters felt so threatened and undermined by the civil administration that they often expressed their dismay in Annual Reports, printed in the *Empire Forestry Review* – sarcastic statements such as this from Mead: 'the field staff remains ludicrously inadequate at a strength of forty-one, including six rangers'.<sup>101</sup> British colonial foresters, who took over when Sarawak became a Crown Colony in 1946, would recall the 1920s and 1930s under the Brooke regime with comments such as how it was 'unfortunate for the forestry history of Sarawak that this resentment [of the Forest Order] was not confined to the native population, but that the Order was actively opposed by a number of officials whose cooperation and support was essential to acceptance and understanding by the native population of the principles of planned forestry'.<sup>102</sup>

Sarawak foresters were unable to take complete control of political forests. Like the Siamese department during this period, they were forced to rely on the less restrictive classification of 'Protected Forest', which became the major category of political forests after 1934. Local people had hated the term 'reserved forest', as the Conservator of Forests (J.P. Mead) described in *The Malayan Forester* in 1937: 'In Sarawak, the term "forest reserve" has become so unpopular that it has been found necessary, in order to continue forest demarcation at all, to coin the term "protected forests".' The term was not coined, in fact, but referred to the same, less restrictive category as that used in Siam, borrowed in both cases from Indian forest laws. Although local people could enter Protected Forests to collect forest products or hunt, shifting cultivation was forbidden. But even this was sometimes impossible to prevent or correct once trees had been cut and people had moved in.<sup>103</sup> On the ground, there was considerable ambiguity over the control of Protected Forests. Even as late as 1948 the *Empire Forestry Review's* summary of the Annual Forest Report of Sarawak stated: 'The Exact Status of [Protected Forest] is not defined, but, presumably, it does not measure

up fully to that of a forest reserve proper.<sup>104</sup> This comment repeated a notion that had appeared in the Forest Reports and their summaries in *Empire Forestry Review* since 1934. These repeated complaints show how much some foresters detested the category, although others were happy to claim the Protected Forests as formally gazetted and thus under the complete control of the Forest Department. By 1938, the Forest Department had grudgingly conceded that the category of Protected Forests was a compromise. Mead noted in the introduction to the 1938 Forest Report that ‘the experience of five years has shown that the psychological effect of the prior grant of small privileges like the right to take timber for domestic use has been such as to practically eradicate any feeling of antipathy, while the concession in a country of low population density has a negligible effect on the forest’. Even more strongly put, The Forestry Development Plan for Sarawak (1949) declared,

The introduction of this new type [of forest reserve] – the protected forest – was undoubtedly the most important legislative step in the history of the Department; for although the concessions made to local rights were neither substantial nor such as would derogate from the value of the reserve, these concessions were sufficient to reform what had previously been a general body of public opposition. It is interesting that there has been practically no major complaint against the constitution of any protected forest reserve since the introduction of the new regulations in 1934, and as a result of this complete change in the public reaction to forestry, it was possible, even with the very limited staff available to the Department, to accelerate the process of reservation.<sup>105</sup>

Nevertheless, the ambiguity of the category was further underlined by people’s claims during our fieldwork that areas we knew had been gazetted as Protected Forest were ‘Communal Forests’ – another category entirely. Indeed, another sign of the concern over local access to forests during the Brookes regime in Sarawak was the adoption from India of the ‘Communal Forest’ category – a category passed over even in liberal Siam. However, very little land was ever gazetted as Communal Forest (approx. 34 sq. miles in 1957; 42 sq. miles by 1963 where it has stayed until the present). One reason for this may have been because Communal Forests actually went out of foresters’ direct control to the control of District Officers<sup>106</sup> – again illustrating the political tensions between the territorial aspirations of competing agencies. The 1951 Sarawak Annual Report as summarised in the *Empire Forestry Review* went so far as to say that ‘The present policy is to discourage the formation of communal forests and to constitute in their place suitable small forests that can supply all requirements and, at the same time, be subject to adequate control’.<sup>107</sup> Even within the ranks of foresters, however, there was disagreement over the relative benefits of having a category of Communal Forests. The influential former Malayan forester Oliphant (discussed in Part 2) stated as early as 1941, regarding Communal Forests: ‘The principle that benefits from forestry, including revenue, should be

enjoyed by the inhabitants of the locality in which they accrue, instead of passing to a remote central government, is one that should be more widely recognised as a means of raising forestry in the popular esteem.'<sup>108</sup> This however, is more fitting of a forestry officer who was by this time used to dealing with a regime like that of the Brookes' – one with a limited scope for forestry. After the war and the transfer of power to the British, only some 10 more square miles of Communal Forests were reserved.

After the British took over Sarawak as a crown colony in 1946, foresters continued to make concessions to local people and their defenders in other parts of the administration, and they continued to have somewhat less autonomy than foresters on the Malayan peninsula. However, the political shift produced a government much more amenable to professional forestry objectives, perhaps as a result of its closer connections to the much stronger Malayan (Peninsular) Forest Department and British forestry empire (see Part 2). The changing climate was illustrated by legislation enabling the 1954 Forest Rules and the 1958 Land Code. It was slightly tempered from 1951 to the end of British colonialism in 1963 because all forest reservation or excision (i.e., the degazetting of forest) had to be approved by the Natural Resources Board. Chaired by the Secretary for Native Affairs, the Board consisted of representatives from various administrative services concerned with land affairs, including the Conservator of Forests, the Directors of Agriculture, Lands and Surveys, Geological Surveys, and two gubernatorial appointees.<sup>109</sup> Nevertheless, the Natural Resources Board was also a means by which colonial foresters hoped to convince other agencies of the importance of the forestry agenda to state objectives of territorial control and revenue production. The creation of the board was also intended to stimulate 'by propaganda and other means a public interest in the conservation and improvement (i.e., development for production) of natural resources'.<sup>110</sup>

As in the Malay States and Java, and Thailand from the 1960s, conservation arguments provided a strategic discursive means for foresters in Sarawak to attain government-sanctioned control of previously loosely controlled territory, and at least some support from both internal bureaucratic powers and external institutions. The Board evaluated any project that might have an effect on water and soil conservation,<sup>111</sup> and enlisted local agricultural officials to assist forest officials in controlling management practices that were deemed to be bad for conservation.<sup>112</sup> The Board was expanded in 1956 and included the Directors of Agriculture, Lands and Surveys, Geological Surveys, the Conservator of Forests, the Resident, First Division (and the Residents of any division where a meeting was being held), two official members appointed by the Governor, and eight officials representing the various Divisional Advisory Councils. The Directorship was changed, significantly, to the Director of Development from the Secretary of Native Affairs. While the Conservator of Forests thought this was a 'clumsy' organisation, he also said 'it seems to result, to our satisfaction, in an even more thorough examination of forest reservation proposals'.<sup>113</sup>

Given the experience of many of these civil administrators in other parts of the British Empire, it was no large leap to justify forestry as an appropriate part of the state enterprise. By the end of colonialism in 1963, nearly 30 percent of Sarawak's total territory was reserved (Table 2). In Sarawak, then, the pressure for forest reservation from both the rising value of forests with the post-war timber boom and Sarawak's increasing integration into professional forestry networks (see Part 2) helped disarm – or at least overrule – civil administrators defending a legal legacy of recognising 'native' territorial rights in forests.<sup>114</sup>

These examples show that although ecological and economic considerations are important to understanding variation in professional forestry practice, the impacts are mediated through and shaped by the forestry department's place in the larger project of state rule. In other words, an examination of politics fills in important details about the trends shown in Tables 1 and 2. For example, in the Thai case, attention to relations with civil administrators was crucial to understanding why the government did not initiate reservation of highly valuable teak forests prior to World War Two, and why rapid reservation during the 1960s and 1970s was undermined by massive illegal occupation of Reserve Forests. In the Malay case, the multiple points of convergence of interests between the civil administration and professional foresters helps explain why this department was often considered the most successful in the British Empire, at least in terms of gaining support from the government for strong territorial controls and for a well-staffed forestry department. In Indonesia, new alliances between civil administrators and foresters were created in Kalimantan as a result of the centralisation that emerged as part of the nationalist spirit and the extensive opportunities for personal gain. In all our sites, none of these roads to convergence of agendas was smooth. However, foresters for a critical historical moment were able to articulate their goals with the discourses of development, civilisation and improvement and turn national land use policy in their favour.

Up to this point we have emphasised local, contextual reasons for variation in the institutional configurations and power of forest departments in our five sites. This provides a contrast to diffusion-based models of the development of professional forestry, models that assume that the basic practices were developed in the centres of power of forestry empires, and transferred outwards to the peripheries. This is not intended to suggest that integration into forestry empires is not important in shaping forestry institutions. However, the importance of this integration is not quite what diffusion approaches might predict. In Part 2 of this paper, forthcoming in *Environment and History*, we shall turn to the role of what scholars who emphasise global convergence in professional forestry look to as the crucial means of this: the integration of professional forestry into networks through which models and theories of forestry practice move. We address the role of networks in shaping both convergence and variation in professional forestry in our study sites.

## NOTES

<sup>1</sup> This would have been particularly true prior to the 'Reformasi' period, after Suharto's fall in 1998, when enraged rural people rushed onto the state forest lands in Java and occupied them or cut and sold the trees.

<sup>2</sup> Rajan, 1997; Fortmann and Fairfax, 1985; Scott, 1998.

<sup>3</sup> Byres 2005.

<sup>4</sup> For a discussion of what we mean by the term 'political forests', see Peluso and Vandergeest, 2001.

<sup>5</sup> See Peluso and Vandergeest, 2001.

<sup>6</sup> As we show in Part 2, Indonesia's timing was a bit different on this issue.

<sup>7</sup> Rajan, 1997: 360.

<sup>8</sup> Ibid.: 332–4; Lowood, 1990.

<sup>9</sup> Scott, 1998.

<sup>10</sup> Ibid., p.19.

<sup>11</sup> Fortmann and Fairfax, 1985: 106.

<sup>12</sup> Ibid.: 107; Peluso, 1992.

<sup>13</sup> Peluso and Vandergeest, 2001.

<sup>14</sup> Sivaramakrishnan, 1997, 1999; Radkau, 1996.

<sup>15</sup> We are currently preparing another paper on this topic.

<sup>16</sup> On this, see also, Peluso and Vandergeest, 2001.

<sup>17</sup> Daendels established Java's first Forest Service ('*Administratie van Houtbosschen*' or 'Forest Board') in 1808, on the order of Napoleon to ensure a flow of revenue from the island's forests. All forests, though not yet demarcated, were declared the domain of the state. After a short British interregnum under Raffles during which this government body was inactive, the Dutch resumed control over Java and its forests in 1816, combining ideas from both Daendels and Raffles about state forest control, such as Raffles' notion of state forests and Daendels' state monopoly on teak (Soepardi, 1974: 54–55; Schuitemaker, 1950: 39–40; Peluso 1992: 48–50; Boomgaard, 1994: 119). Forest management was decentralized in 1832 under the Residents and even when it was under the Director of Cultivation, other departments competed heavily for access to teak. Principles of scientific forestry were not legitimated in state law until the Forest Laws of 1865. These laws also provided for the first professional forest service, led by trained foresters. In 1866 they were administered by the Civil Service (*Binnenlandsch Bestuur*), and in 1870 became a separate division therein. See Soepardi, 1974: 25; Peluso, 1992: 65; Boomgaard, 1994: 125.

<sup>18</sup> Sources: Data in Tables 1 and 2 on number of staff are given in Peluso and Vandergeest, 2001. Other data are drawn from the following:

Thailand: Vandergeest, 1996: 166; Java: Peluso, 1992: 229; Peluso and Vandergeest, 2001; FMS and West Malaysia: Peluso and Vandergeest, 2001; Ministry of Primary Industries, Malaysia, 'Forestry in Malaysia', undated, p. 19.

Kedah: World Wildlife Fund, 'Proposals for a Conservation Strategy'. Paper submitted to the State Government of Kedah, 1984.

Sarawak: Ministry of Primary Industries, Malaysia, 'Forestry in Malaysia', undated, p. 19.

<sup>19</sup> See note 17.

<sup>20</sup> A few foresters were posted in Borneo during the colonial period but they reported directly to civil administrators and had no specific institution with a mandate to control and manage forest species and land. See the MoF's description of colonial foresters' lack of authority/jurisdiction in GOI, 1986, vol I: 117–18, and jurisdictional map on p. 116.

<sup>21</sup> Sources: see note 18.

<sup>22</sup> Source: Mahmud, 1979: 90.

<sup>23</sup> From a book entitled *Logging Industry in Peninsular Malaysia: A case Study in Perak*. Full citation not available.

<sup>24</sup> This amount includes about 15 % of the land cover of all four provinces of Kalimantan; land that, according to the TGHK; could be converted to other uses, but at the time of this report was under the jurisdiction of the Ministry of Forestry. Calculated from GOI, 1986: Vol. III: 87.

<sup>25</sup> The different categories and terms for 'forests' and 'reserves' differ from place to place and change over time. For a detailed explanation of our uses of these terms, see Peluso and Vandergeest, 2001.

<sup>26</sup> Latour, 1993.

<sup>27</sup> Magenda, 1991; Lindblad, 1988; Kaur, 1998; Peluso, 1983.

<sup>28</sup> Dauvergne, 1997; Potter, 2003.

<sup>29</sup> Lugt, 1933.

<sup>30</sup> By 'domestic' use in Java at this time, we are including the use of teak in the colonial ship-building industry, as well as the huge demands of the railway, sugar and other industries.

<sup>31</sup> Cordes, 1881: 204–210; Peluso, 1992.

<sup>32</sup> Ingram, 1971.

<sup>33</sup> Leigh, 1998; Kaur, 1998.

<sup>34</sup> Potter, 1996; Lindblad, 1988; Peluso, 1983.

<sup>35</sup> E.g., *The Malayan Forester* 3: 33–41; 6: 224.

<sup>36</sup> Grove, 1995; Potter, 1988; Guha, 1990; Peluso, 1992; Sivaramakrishnan, 1997; Agrawal, 2001.

<sup>37</sup> See, e.g., Lugt, 1933: 25–33; 112–14; Potter, 2003: 44.

<sup>38</sup> Cribb, 1988.

<sup>39</sup> Dove, 1985; Hong, 1986; Palte, 1985; Hefner, 1990; Peluso, 1992; Li, 1999; Reid, 1993.

<sup>40</sup> Vandergeest, 1996; Vandergeest and Peluso, 1995; Peluso, 1992.

<sup>41</sup> Many Malayan forests were converted to plantations by competing (non-forestry) government land development agencies.

<sup>42</sup> The dates for the Cultivation Systems vary; the ones cited here are from Boomgaard (1994).

<sup>43</sup> Cordes, 1881.

<sup>44</sup> *Reglement voor het Beheer en de exploitatie der houtbosschen*.

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- <sup>45</sup> Boomgaard, 1994.
- <sup>46</sup> Lugt, 1933: 112.
- <sup>47</sup> Simon, 1983: 11.
- <sup>48</sup> Boomgaard, 1988; Peluso, 1992: 57.
- <sup>49</sup> Zwart, 1936.
- <sup>50</sup> Soepardi, 1974, vol 2: 25; see also Sutherland, 1979 on colonial police in general.
- <sup>51</sup> Boomgaard, 1988.
- <sup>52</sup> Benda and Castles, 1969: 223; McVey, 1965; Peluso, 1992.
- <sup>53</sup> Zwart, 1936: 286–7; 1934, 632; Doorn, 1932: 805.
- <sup>54</sup> Benda and Castles, 1969: 223.
- <sup>55</sup> GOI, 1986, vol II: 42.
- <sup>56</sup> Soepardi, 1974.
- <sup>57</sup> PP no 64/1957.
- <sup>58</sup> Junus, 1984: 172.
- <sup>59</sup> *Malayan Forester*, 3: 37.
- <sup>60</sup> *Ibid.*: 40.
- <sup>61</sup> Kratoska, 1985.
- <sup>62</sup> Sioh, 1998.
- <sup>63</sup> *Ibid.*; Ghee, 1976.
- <sup>64</sup> Wyatt-Smith, 1958.
- <sup>65</sup> Stubbs, 1989. We are working on a separate paper on this topic.
- <sup>66</sup> Aiken and Leigh, 1992: 65.
- <sup>67</sup> Chalermrath, 1971.
- <sup>68</sup> Sunthornswat, 1977: 120.
- <sup>69</sup> *Ibid.*: 154.
- <sup>70</sup> Sunthornswat 1977. The involvement of the Ministry of Interior as well as the king in the detailed decisions regarding logging concessions and other forestry issues is apparent in many documents in the National Archives of Thailand. Sunthornswat (1977)'s thesis, which is the source for many of these comments, provides a thorough list of Archival sources on the early period of the Forestry Department.
- <sup>71</sup> Bourke-Borrowes, 1928.
- <sup>72</sup> Sunthornswat, 1977: 122. National Archives of Thailand File PS2420 ('Create Silviculture Position') and PS2482 ('Budget for Silviculture program').
- <sup>73</sup> Sunthornswat, 1977; Chalermrath, 1971; Bourke-Borrowes, 1928: 146–7.
- <sup>74</sup> Vandergeest, 1996.
- <sup>75</sup> Peluso and Vandergeest, 2001.
- <sup>76</sup> Vandergeest, 1996.
- <sup>77</sup> *Ibid.*
- <sup>78</sup> Bunnag, 1977.
- <sup>79</sup> Sunthornswat, 1977): 109; National Archives of Thailand, KS 5.1/13; KS5.1/10.
- <sup>80</sup> Vandergeest, 1996.



- <sup>81</sup> Wadley, 1997.
- <sup>82</sup> GOI, 1986, vol. I: 81–85; Burns, 1999; Peluso and Vandergeest, 2001.
- <sup>83</sup> GOI, 1986, vol. I.
- <sup>84</sup> Peluso and Vandergeest, 2001.
- <sup>85</sup> GOI, 1986, Vol II: 62.
- <sup>86</sup> Most histories of Indonesian forestry and logging that deal with Kalimantan and/or all Outer Island logging start with 1965–1967 with the rise of Suharto and the transformation of the Indonesian political economy into one based on extractive development (e.g., Ross, 2001; Dauvergne, 2001; Potter, 1996; Barber, 1989; Moniaga, 1993). In arguments with a great deal of current resonance, they used the same idea to say that at the very smallest, provincial level forest management would be acceptable. See paragraph 8, pp. No 64, 1957.
- <sup>87</sup> See GOI, 1986, vol. II: 46–7.
- <sup>88</sup> GOI, 1986, vol. II: 42–4.
- <sup>89</sup> GOI, 1986, vol. II: 44. Not all these lands were actually reserved according to the MoF's own procedures, however, and this is today leading to legal challenges contesting the forest boundaries (Sirait et al., 2004).
- <sup>90</sup> GOI, 1986, vol.II: 77.
- <sup>91</sup> Ibid.: 92.
- <sup>92</sup> Ibid., p. 46, citing *Almanak Kehutanan* 1961/1962.
- <sup>93</sup> Ibid., p. 79.
- <sup>94</sup> Even though it was a 'Department' under the Ministry of Agriculture, Soedjarwo was appointed a Minister, and thus became part of the cabinet.
- <sup>95</sup> GOI, 1986, vol. II: 80.
- <sup>96</sup> Boomgaard, 1996.
- <sup>97</sup> Potter, 1996: 17.
- <sup>98</sup> Dauvergne, 2001.
- <sup>99</sup> Mead, 1940.
- <sup>100</sup> Spurway, 1940.
- <sup>101</sup> Mead, 1940: 354.
- <sup>102</sup> Forestry Development Plan, Sarawak, n.d.: paragraph 3.
- <sup>103</sup> Kaur, 1998: 64; Empeni Lang, then head of Mahkamah Adat, Kuching, Sarawak, pers. com., 1999.
- <sup>104</sup> *Empire Forestry Review* 1950, vol. 20(2): 386.
- <sup>105</sup> Forestry Development Report of Sarawak, 1949: para. 7.
- <sup>106</sup> *Empire Forestry Review* 1950, vol. 20(2): 386.
- <sup>107</sup> Smith, 1954: 194.
- <sup>108</sup> Oliphant, 1941: 204.
- <sup>109</sup> Sarawak Annual Report, 1951; Spurway, 1952: 230.
- <sup>110</sup> Strong, 1932.
- <sup>111</sup> Ibid.: 249.
- <sup>112</sup> Spurway, 1952: 230.

<sup>113</sup> Browne, 1956: 43.

<sup>114</sup> Peluso and Vandergeest, 2001.

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