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Empires of Forestry: Professional Forestry and State Power in Southeast Asia, Part 2

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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, in an earlier issue of this journal, challenged popular and scholarly accounts of colonial forestry as a set of simplifying practices exported from Europe and applied in the European colonies. We showed that professional forestry empires were constituted under colonialism through local politics that were specific to particular colonies and technically uncolonised regions. Part 2 looks 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. In both periods, new hybrid forestry practices were produced as compromises with the ideal German and FAO forestry models through interactions with local ecologies, economies and politics. These hybrid practices were incorporated into and helped constitute the two empire forestry networks

KEY WORDS

Forestry, empire, Southeast Asian history, agrarian change

INTRODUCTION

This is the second part of an article that compares the emergence of professional scientific forestry in what are now Indonesia, Malaysia and Thailand. In Part 1, we outlined how professional forestry empires in these sites – Java, Dutch Borneo, Sarawak, the Federated Malay States (FMS) and Siam – were constituted during the colonial era through local politics specific to particular colonies and technically uncolonised regions. Local political, economic and ecological conditions shaped the forms and practices of colonial forestry and the relative power of professional forestry, as indicated both by its influence within states, and its ability to assert legal control over territory. In Part 2 we examine how professional forestry was produced through the participation of foresters in professional-scientific networks. We begin with colonial networks in the first section, then move on to postcolonial networks in a second section, focusing on the work of the Food and Agriculture Organization of the United Nations (FAO). The FAO dominated post-colonial-era networks during the 1950s and 1960s, and ultimately did more to enable, spread and standardise professional forestry than did the Europe-centred colonial forestry networks. Of note, however, is the fact that many colonial foresters joined the FAO in the 1950s and 60s and thus continued to influence the global spread of colonial-style state forestry.

The research presented here suggests that accounts of the emergence of professional forestry in Asia that emphasise the production and spread of European models of governance and bureaucratisation should be qualified with greater attention to how professional forestry was constituted through networks that were, by the twentieth century, considerably more de-centred than what is implied in these accounts (see Part 1). Histories of botanical and geological sciences, for example, have drawn on Latourian¹ notions of Europe as a centre of calculation and the producer of hegemonic classificatory schemes. By the twentieth century, however, forestry research institutes in sites like Malaysia, Java and India had also become producers of forestry knowledge and management practices.² The forestry practices produced in these ‘sites of application’³ after the turn of the twentieth century were no longer solely products of scientific knowledge produced in European sites and disseminated out to the colonies. Rather, knowledge and practices produced in colonial sites as well as ecological theories emanating from the United States also circulated through these networks.⁴ Although the higher ranks of the colonial forestry departments were still comprised primarily of foresters who had received training in European forestry schools, knowledge was produced in colonial sites through interaction with local ecologies and peoples, and was thus more than a simple application of European forestry models to colonial sites. It was rather a kind of hybrid, the product of the interaction across scales of European forestry models, US ecological theories, and site-specific ecologies, politics, economies and practical knowledge. As we

will show, these hybrid ideas were incorporated into and helped constitute the forestry networks that comprised twentieth century forestry empires.

COLONIAL FORESTRY NETWORKS

In Part 1 of this paper, we discussed some of the contextual factors that helped explain why forestry institutions in Java and Malaya were relatively strong, and why they were relatively weak in Siam, Sarawak and Dutch Borneo.⁵ It was the more powerful forestry institutions in Java and the Malay States that were the most strongly integrated into international forestry networks during the period from their formation at the turn of the century to the middle of the twentieth century. The relatively weaker colonial forestry services in Siam, Sarawak and Dutch Borneo were less well-integrated into professional forestry circuits. Differences in degree of integration were linked in part to the variation in the capacity of local forestry institutions to create and maintain active institutions that facilitated network integration, and to political support for integration. These were in turn tied up with differences in state capacity to generate revenues, the size and nature of colonial economies, and the way that different factions in these states had different positions vis-à-vis the territorial aspirations of the forestry departments, as discussed in Part I of this paper.

German forestry schools were crucial during the formative period of forest departments in Southeast Asia. Between 1849 and 1857, four German foresters and four Dutch foresters trained in Germany were appointed to the Netherlands Indies Forest Service in Java as it was being set up.⁶ Among these first German-trained foresters was a surveyor, dispatched early on to advise on mapping and demarcating the forest. Another organised a territorial system of forest production.⁷ Direct German participation in the departments established later in the period was less. However, the Federated Malay States (hereafter 'FMS') department hired a German forester who helped develop the department's approach to silviculture,⁸ while many of the first appointees to FMS department had spent time training or doing study tours in Germany.⁹

As professional forestry became increasingly institutionalised as a core state activity in their empires, both the English and Dutch established their own tropical agriculture and forestry schools. The key schools were in Wageningen, Oxford, Edinburgh and Dehra Dun.

Throughout most of the colonial period, the top Dutch foresters were trained at the Agricultural College at Wageningen in Holland. Particularly in the early years of the college's establishment, foresters' training was combined with that of other experts in tropical agriculture and horticulture, most of whom would work managing plantation agriculture in the colonies. Tropical agriculture courses were first taught at Wageningen in 1880. In 1891 a two-year course in Tropical Forestry (Indies Forestry) was initiated. At that time, however, Wageningen

was only a college of higher education; it was not until 1918 that it became a university.¹⁰ Nevertheless, the training of foresters at the college was the highest and most specialised possible. A similar and related course was taught at a college in Tharand, Germany. The colonial budget contained line items to provide scholarships for Indonesians to attend Wageningen, in Holland. The Volksraad, or People's Council, established in the first decades of the twentieth century, wanted so badly to have a higher education facility for agriculture and forestry in the Indies, however, that they cut back on the budget item for scholarships for Indonesians. Despite this, no forestry universities were established in Indonesia until after World War Two.¹¹

In England, the Royal Engineering College at Cooper's Hill, an institution devoted to training civil servants for India, established training in forestry in 1884, followed by the college at Edinburgh in 1887. Many British foresters in Malaya and Siam received their training in these institutions; the school in Edinburgh helps explain why many colonial foresters came from Scotland. In 1905 the forestry school in Cooper's Hill was transferred to Oxford, and the Imperial Forestry Institute was added in 1925 as a post-graduate institution where graduates of European universities appointed to the British colonial Forest Services were required to undertake training. In 1935 all British colonial foresters were unified under the newly constituted 'Colonial Forest Service'. Officers appointed to this service were required to have a university degree and a certificate granted by the Imperial Forestry Institute. The Dehra Dun School in India was established by Sir Dietrich Brandis in 1878 for British foresters in India – several years earlier than the forestry schools in Britain.¹² This school also trained Siamese foresters (below), and some of the Europeans foresters hired in the Malay States.

The curricula at these British, Dutch and Indian schools were initially based on forestry tenets first developed by German foresters, as many writers emphasising convergence in professional forestry practice have discussed.¹³ These tenets included reducing diversity in particular areas of interest for timber or other specific forest products, territorial rotations of age, a positive balance sheet and sustained yield. Through their curricula and integrative effects, these institutions thus facilitated convergence in the theory of forestry practice until at least the early twentieth century.

At the same time, however, an examination of discussions among professional foresters in fora like the *Malayan Forester*, *The Indian Forester*, or *Tectona*, shows that considerable scope for debate and difference emerged within these schools with respect to forest management.¹⁴ Further, the European training schools were not the only source of ideas for practising professional forestry. Many ideas about forestry also emerged as foresters struggled to understand and manage highly complex tropical forests in different economic, ecological and political contexts, as we show above and elsewhere for Southeast Asia.¹⁵ By the time forest services, departments or offices were established in Siam,

Malaya, Sarawak and Dutch Borneo, forestry departments could draw on a corps of European foresters who had considerable experience in tropical forestry, and who actively debated the desirability of different approaches to forest management. Debates emerged not just around silvicultural practices, but also about legal mechanisms for reserving forests, managing timber industries, involvement of villages and farmers, and even the necessity of controlling swidden cultivation.¹⁶ These debates signalled the emergence of hybrid forestry practices – what we called ‘colonial forest practices’ in our first joint comparative paper.¹⁷ ‘Hybrid practices’ more accurately describes what happened in the Southeast Asian tropics as European and local foresters trained in the German tenets of professional forestry engaged with complex tropical forestry ecologies and uses in different colonial sites.

We will elaborate on two examples of this diversity and hybridity important to Southeast Asia to illustrate this argument. The first concerns silvicultural practices developed in encounters with complex forest ecologies that seemed (at the time) impervious to modelling and predictability. In the Malay states, the forest department developed a silviculture system, called the Regeneration Improvement Fellings (RIF), in which unwanted vegetation was removed through selective poisoning and thinning, encouraging more rapid growth of economic species.¹⁸ Foresters framed this approach in terms of Clemsonian successional theories developed in the United States, rather than in German silvicultural approaches based in simplification. Thus the removal of vegetation was treated as a disturbance, managed so as to encourage the regeneration of desired species in the subsequent successional stages.¹⁹

This system was developed in the context of a vigorous debate about the ultimate goals of forest management. Some foresters rejected the principles of plantation forestry and sustained yield management that aimed to minimise diversity and heighten legibility for economic harvests. This side saw these German derived principles as inappropriate for tropical forest ecologies. Other foresters continued to argue for the desirability of artificial regeneration. Those on this side depicted Malaya as an exceptional case where the ideal legible plantation forests could not be produced.²⁰ A key proponent of the former view was J.N. Oliphant, whose importance can be gauged by the fact that he was later director of the Imperial Forestry Institute at Oxford for eight years,²¹ as well as Chief Conservator in Nigeria. Oliphant’s oft-repeated description of artificial regeneration as a form of ‘planting measles’ stands in contrast to Scott’s depiction of a forestry profession dedicated to radical simplification.²² Working in Malaya, Oliphant argued that even trained foresters could never completely understand the complexities of tropical rainforests. According to him, artificial regeneration or plantations should be a tropical forester’s last resort, appropriate only where a country had few forests; when a species was so valuable that it could be treated like a quasi-agricultural crop (as with teak, or rubber); or where the practicalities of working with natural forests were complicated by their relative

maturity and specific ecologies.²³ These sorts of debates also characterised other departments in the region as they encountered ecologies that could not be easily simplified and controlled; even the question of whether teak should be grown in mixed or monocultural stands, and whether regeneration should be natural or artificial was hotly debated in Java.²⁴

A second example of hybrid forest practices concerns the encounter between European forestry models that assumed an absence of local forest users, and the people who populated forests in colonial sites. This debate turned around the ways that colonial forestry practices could deal with the people who used and practised agriculture in forests.²⁵ Two forms of engagement emerged during the colonial period. The first involved the creation of village forests where village institutions had some level of control over forest management. The second, called *taungya* in British-influenced areas, was a means for mobilising resident labour to plant valuable species. Unlike village forestry, *taungya* during the colonial period was by no means a collaborative endeavour on forest lands; it was promoted by foresters as a way to recruit free labour for reforestation – in exchange for very limited access to the land between the rows of trees for the first couple of years of growth. It did best in densely populated areas with high incidence of landlessness and was thus exploitative.²⁶

Professional foresters who were convinced that the highly rationalised German forestry methods taught in European institutions had to be the basis of professional forestry in the tropics generally rejected village forestry in particular, as it was more of a compromise than *taungya*, which could ideally be used to create simplified forests. The idea that forestry departments could mobilise villagers either for management, or for their labour, emerged in India and Burma, through debates around customary rights of forest residents and the mobilisation of labour to produce plantations.²⁷ During the colonial period the only forestry department in our study area which formally acknowledged village forestry was Sarawak – through the forest category of ‘communal forests’, although the notion had some valence in parts of Java and Dutch Borneo,²⁸ and after the war, in Thailand. *Taungya* became central to professional forestry in Java, where it was called ‘*tumpang sari*’, after local peasants’ agroforestry techniques. After World War Two, Thailand and to a lesser extent Malaya picked up on *taungya*, but reframed as a much more benevolent practice that combined reforestation of degraded forest with a programme to promote alternative livelihoods for illegal swidden cultivators (below). These models for either involving villagers in forest management, or for making limited cultivation rights contingent on providing labour for creating forest plantations were initially produced in Asian sites, and entered into circulation in forestry networks to become part of the forestry repertoire available to professional foresters.

By the early twentieth century foresters in Southeast Asia drew not only on German and French forestry models for elaborating professional forestry practice, but also on their own and others’ experiences in colonial regions such

as India, Burma and Java. Foresters could be very specific about which model they wanted to import through their hiring practices. For example, the Siamese forestry department was established in 1896 by hiring British foresters with Burmese experience, and they were clear that this was an explicit means of importing the Burmese model of forestry.²⁹ Similarly, in the FMS, the first Chief Forest Officer, A.M. Burns-Murdoch, was transferred from Burma in 1901. Burma became the model for forest legislation in the FMS and Kedah.³⁰ In turn, the Brooke regime in Sarawak borrowed from British Malaya, through the appointment of J.P. Mead as the first Conservator of Forests in Sarawak. Sarawak also borrowed directly from the British in India through the imitation of their forest reservation laws, which were less stringent than those in Burma.³¹ Netherlands East Indies foresters employed in Dutch Borneo generally gained their initial experience and training in Java, and some were further trained in the Netherlands. Both imported and local hybrid practices were continually and creatively adapted to varied political, economic and ecological circumstances in the different sites.

One source of diversity among forestry practices in Southeast Asia was thus the availability of diverse forest management models through empire forestry networks. This was more important for departments in the Java and Malaya, which were the most integrated into these networks. Some departments were highly integrated and able to learn and apply the professional forestry models available in these networks, while others remained less integrated, and thus less influenced by these circulating ideas. More highly integrated departments had large numbers of foresters who circulated in these networks, as indicated by travel to Europe or India for training as well as participation in study tours, international publications, conferences and the like. During the 1920s and 1930s, for example, the four Federated Malay States employed about 40 senior foresters trained in Europe. This represented about 22 per cent of the entire Colonial senior forestry staff, while the FMS had only 4 per cent of the Empire's total reserved forest area.³² Troup noted that of all the British Colonies, only the Nigerian Forest Service had more European-trained foresters than Malaya in 1939.³³ It was obviously a plum of a post. Java was similarly well-staffed with foresters participating in Dutch empire networks: In 1940, the forest department in Java included 87 upper-level staff, most of who had a degree from Wageningen or another university-level school in Europe.

A different kind of diversity resulted where colonial rule was weaker, or when regional forest services were less integrated into empire networks. In Siam the government set up the Forestry Department in the northern teak forest areas by hiring British foresters from Burma, where forestry was also oriented around the management and extraction of teak. In 1901, 16 European foresters worked in Siam, and by 1914, the department still employed 18 Europeans, including the British head forester. But, unlike the situation in colonial regimes, European foresters had relatively weak influence in setting the rules governing forest man-

agement and access. Siam's king and other officials were concerned that these foresters were too closely linked to the British logging companies dominating the Siamese teak industry. Some European 'foresters' even left their posts to work for British logging companies.³⁴ To avoid these problems, the government trained Siamese foresters to replace them. Beginning in 1901, Siamese foresters attended India's forestry school at Dehra Dun, and from 1912, the Burma Forest School. By the 1920s only a few of the 600-strong department were British, as the British were gradually replaced by Siamese graduates of Asian forestry schools.³⁵ Siamese foresters were thus exposed to training in Asian-based colonial institutes and learned from their experience and hybrid practices in the field, after European ideas began to be adapted to local conditions. But their ability to apply these models in Siamese forestry was constrained by local politics and by a Ministry of Interior that opposed constraints on local people's access to forests, as explained in Part 1 of this paper.

Foresters in Sarawak were even less integrated with empire forestry networks. At its height, in 1930, the Sarawak forest department had five European-trained senior foresters (European Officers), five Eurasian officers, locally trained, and 101 at other ranks. Retrenchment was severe during the Depression, and in 1934, the total staff was only 46, with only two European Officers.³⁶ Even though by 1949 the senior officers had been replaced, the Conservator of Forests, Spurway, still worried about how to replace the junior officers, given the changes in the region after World War Two. He grumbled, 'The breakdown in education facilities during the [Japanese] Occupation period is not entirely to blame. The class of youth from which these posts were previously recruited seems more and more to prefer the hoot of the automobile in the big city to the whoop of the gibbon in the tree tops of the forests'.³⁷ Dutch Borneo had only about 17 foresters for the whole of the region, all of whom had prior experience in Java, but were less likely to have enjoyed forestry education abroad. Possibilities for local training were also limited.

Even in the departments with large numbers of Europeans, however, the vast majority of forestry department staff were local or 'native' employees or Eurasians (in Java and DB). The larger forest departments had to be concerned about training local staff in basic forestry techniques. Many were limited to on-the-job training for much of the colonial period. The Malayan, NEI – Java and Siamese departments, however, all set up training schools for lower-level 'native' staff. The colonial forest service in Java-Madura (henceforth referred to as 'Java') was by far the largest among the sites in our study, and the facilities for training foresters were correspondingly the most extensive. By the end of 1940, the Service had a regular staff of over three thousand regular personnel, 87 at upper levels, 480 middle level and 2,674 lower level employees.³⁸ Lower level positions required at least an elementary school education, while the position of Forest Supervisor required completion of the *Cultuurschool* in Sukabumi or Malang.³⁹ The *Tuinbouwschool* in Bogor was a middle school for tropical

agriculture that also trained foresters. Secondary forestry schools played a very important role in the education of mid and upper level foresters in the NEI. By 1941, some 660 agricultural, plantation and forestry experts had graduated from such schools. Many of the (Java-born) Europeans and Eurasians who studied beside their native counterparts had opportunities to go on to academy training in Holland, while most native graduates were hired directly into the NEI Forest Service.

The FMS Department set up the Kepong Forest School (KFS) in 1927, which acted as an important centre for later Malaysian foresters. Prior to World War Two, KFS graduated about 25 students each year from a one-year programme. They served in both the Federated and Unfederated States, and to a lesser extent, in Sabah and Brunei. A Forest School Course was held in Kuching in 1941 and a second in 1950. In 1950, ten students passed the exams for a four-month course on surveying, silviculture and the identification of trees and timbers.⁴⁰ Another 11 enrolled in 1951. The Siamese, finally, set up a school for training subordinate staff in Phrae in Northern Thailand, in 1935.

These schools had the effect of transferring some of basic elements of how to make forests 'visible' and 'calculable' to middle-level local staff. In other words, they introduced European ways of seeing through a professional lens, including the idea of 'forests' as a resource to be understood scientifically and managed.⁴¹ School subjects included forest mensuration, forest law, forest protection, forest management and silviculture, botany and timber identification, surveying and levelling, and architectural drawing. Since many were also connected to schools for training plantation managers, they also established connections and common techniques amongst foresters and growers of other colonial tropical crops.

However, these institutions were not only a conduit for importing professional forestry practices into these sites. They also relied on the local experience of their trainees,⁴² who often had detailed knowledge of local forests and ecologies that European foresters lacked. It was the local employees who carried out much of the day to day work of forest management and protection, and they were thus crucial to the creation of locally specific forest management practices, and to what European-trained foresters learned about local forest ecologies and peoples.⁴³

One important mechanism by which these training institutions contributed to developing hybrid forest management practices was through their integration into forestry research institutes that helped produce these practices. In the FMS, the Kepong School was linked to the Forest Research Institute, which was set up in 1929 by the American forester F. W. Foxworthy – which might have contributed to the influence of American ecological theories in Malayan forestry circles. The Institute began publishing *The Malayan Forester* in 1931, which, along with *The Indian Forester* and *Empire Forestry Review*, was widely distributed through the British Empire and beyond. In Java, *Tectona* was published by the Organization of Senior Foresters.⁴⁴ Although some facilities such

as experimental forests were more spread out across Java, Bogor (Buitenzorg) boasted many schools, research facilities and the famous botanical garden. These colonial forestry journals published research papers on forest ecology, economics, politics, policy and professional issues. Through their research, publications, participation in conferences and training, the research and training facilities in Kepong, Buitenzorg and Sukabumi were important sites for the production of locally-specific and hybrid forest forestry practices, and for transmitting information about these practices into the broader empires forestry networks.

Although Dutch and British foresters were trained in different forest schools and did not interact with each other to the degree that foresters did within the British and Dutch empires, there was some contact between the Dutch foresters in Java and British foresters in Malaya and Burma. British and Dutch foresters read each other's journals,⁴⁵ and visited each other's forests and botanical gardens.⁴⁶ Their research institutes exchanged publications and corresponded.⁴⁷

By comparison, professional foresters in Siam, Sarawak and Dutch Borneo were less integrated into the empire forestry networks than those in the FMS and Java. Siamese foresters did not go to Oxford Forestry Institute or Wageningen, and they did not participate in conferences, the publication of journals, or the circulation of foresters within the British and Dutch Empires. The Royal Forestry Department in Thailand did not establish a research institute in conjunction with the Phrae training school, and there were no European language publications documenting Siamese forestry practice circulating outside of Siam. Thus our information on pre-war forestry in Siam is based largely on archival documents, a few theses written by graduate students in Thai universities, plus summaries written either by the Siamese forestry department or by British visitors. Sarawak did not establish a local forestry school for the lower-level staff, and did not even send subordinate staff for training at Kepong after that school was set up in 1927, unlike the other British-influenced states of northern Borneo (Sabah, Brunei).⁴⁸ The Sarawak government's lack of interest in sending foresters for training abroad is consistent with the Brooke's government's policy of maintaining its distance from the type of professional forestry promoted by forestry training institutions, and its commitment to promoting 'Native welfare'. The same can be said about the Siamese government, which hired British foresters to assist them with taking control of the extraction of teak in the north, but did not at this time want to extend this type of control to forests elsewhere in the country on account of opposition from a Ministry of Interior that opposed the 'scientific principles' limiting local people's forest access.⁴⁹

The Outer Islands Forestry Service in the Dutch Indies, which included Dutch Borneo, was formally connected to the service in Java under the rubric of the Netherlands East Indies colonial state. They were constrained however by the nature of colonial rule in these areas, specifically the treaty arrangements with local rulers. This limited forestry's regional and local authority outside Java-Madura, as foresters reported directly to local civil officials.

To summarise this section, we have identified two ways that forestry practices across colonial empires varied. The first was through the production of diverse hybrid practices in particular sites, which subsequently entered into circulation in these networks. Second, in some sites low integration both resulted from and reproduced difficulties in practising scientific forestry based on German tenets. Overall, by the 1920s, European centres of calculations had splintered into overlapping networks and nodes located in the colonies and North America, as well as Europe. This is not to argue that European schools were not relevant – they remained the touchstone for foresters who moved through these networks. But even the European schools had to engage with the hybrid colonial models for practising professional forestry in the Asian colonies.

POST-COLONIAL EMPIRES

After World War Two, forestry networks were reconstituted even while colonial empires were dissolved and replaced by nation-states as the key political unit. The Federated Malay States were combined with the Unfederated States to form Malaya in 1957, and incorporated the Borneo states of Sarawak and Sabah into the Federation of Malaysia (hereafter Malaysia) in 1963. The Dutch Borneo territories, called Kalimantan after Independence, joined Java and the other islands to form the Republic of Indonesia in 1950. Kalimantan was divided into four provinces in 1957. The shift from colonial to national governance, particularly in forestry, was sometimes drawn out over many years. In Malaya, the British stayed through the 1950s to fight off the challenges of the Malayan Communist Party. In Indonesia, many senior Dutch foresters returned after internment during the Japanese Occupation and remained until 1957 when Sukarno required remaining Dutch citizens become (exclusive) citizens of Indonesia or leave. Overall, forestry networks derived from European networks of colonial officers declined in importance during the 1950s.

As is well known, the new Southeast Asian nation-states which emerged from the turmoil following the Second World War adopted doctrines of economic development and national political organisation as their central activity and source of legitimisation. The Food and Agriculture Organization of the United Nations (FAO) became the key international institution supporting ‘forestry for development’⁵⁰ in the emerging national states. The FAO consolidated its central networking role by offering a political model for controlling and managing forests, which supported the new national governments’ common goals of achieving rapid economic growth and controlling territory. Tropical timbers were viewed as ‘subsidies from nature’, and the FAO’s ideas and programmes, combined with advances in extractive technologies and the availability of development ‘loans’, helped strengthen national and state forest department claims on forest resources. More broadly, the FAO advanced the idea that forests were

important not only for forestry, but also for agricultural lands, the wealth and welfare of the nation-state, and national progress in general, thus feeding into the dominant national ideologies of the period. One report stated:

A sound national forest policy aims at the rational development and exploitation of forest resources on the principle of the greatest good for the greatest number.... Forest needs are by no means co-terminous with forest resources, since the factors which determine forest distribution transcend political boundaries. Hence the need arises for the co-ordination of national forest policies. In other words, the peoples of all nations and regions are becoming increasingly conscious of their interdependence, of the existence of 'one world.'...FAO is alive to this and not only because the forests are a repository of important raw materials, but also because they play a decisive role in agricultural economy by protecting croplands and regulating the water regime. Thus a knowledge of the world's forest resources is vital to the execution of the program of FAO in its broader aspects, and not merely to that of its Forestry and Forest Products Division alone.⁵¹

More concretely, The FAO-FD (Forestry Division) sponsored conferences and exchanges among foresters, provided technical training, developed forest surveillance techniques, introduced models and standards for assessing progress in forestry, and disseminated knowledge through persuasive and authoritative discourses. Although the FAO was influential everywhere, integration into the FAO forestry empire had the greatest impact where there were significant untapped timber resources and weak or weakly integrated forestry departments. FAO facilitated an expansion of the power of professional forestry networks from the colonial power bases of Java and Malaya to Siam and Kalimantan, and in Sarawak in conjunction with the very late (post World War Two) British colonial influence (see below). This expansion of professional forestry is most clearly evidenced by the extended and growing territorial jurisdictions of forestry departments, as indicated in Table 1, Part 1 of this paper.⁵² The creation of modern, territorialised, political forests was key to the emergence of Southeast Asia as a major exporter of tropical hardwoods.

The FAO was the dominant forestry network in the region through the 1950s, although its role in different states varied according to the interaction between forestry, the consolidation of political control, and the continued presence of colonial forestry networks. During the 1960s and 1970s, the FAO receded from its previously dominant status, as other development agencies became active in forestry. At the same time, the FAO continued to be influential because of its activities in sponsoring regional forestry networks, the production of knowledge and statistics about forests, continued technical assistance, and for the basic 'forestry for development' model that oriented the work of other development agencies.

Although the FAO facilitated considerable convergence in the practice of professional forestry among the five sites under consideration in this paper, it

did not eliminate variation within professional forestry networks based on the interaction of larger scale professional forestry models with site specific practices. Convergence and variation in post-war forestry networks can be seen by looking at how and where foresters were trained, and by following the regional activities of the FAO in promoting standardisation, a single model for forestry development, forestry education and the suppression of mixed agriculture-forest practices. We will begin with describing how FAO activities facilitated far more convergence in professional forestry practice through the promotion of a model of forestry for development than what was ever achieved during the colonial period. We then move on illustrate continued variation based in how this model was adapted to site-specific circumstances.

CONVERGENCE

The standardisation of training for all foresters was an important component of the convergence of professional forestry practice around the FAO's 'forestry for development' model. Forestry departments in Malaya and Indonesia, where most senior staff were Europeans prior to World War Two, embarked on the indigenisation of their senior staff during and after the war. In the case of Indonesia, this process began during the Japanese occupation, when many Indonesian foresters who occupied middle level management positions were appointed to higher positions under the Japanese Forest Service or *Ringyo Tyuoo Zimusyō*.⁵³ After the war, forestry departments in Malaya and Indonesia worked to replace Europeans by staff who had obtained degrees from forestry schools in Europe, Australia and the USA, many of them funded by FAO.⁵⁴ In both countries, it took some time before people with sufficient education and experience could be promoted to the point where the senior administration was comprised primarily or solely of Indonesians or Malaysians. In Siam, indigenisation had already been achieved prior to World War Two (above), but after the war they also began sending foresters to forestry schools around the world for advanced degrees. Kalimantan's integration into a national system was part of the process of building the national forestry department and, after 1957, staffing it exclusively with Indonesians. Sarawak was somewhat different, as a major bolstering of its Forest Service occurred between 1946 and 1963, the period known as 'the British Inter-regnum' when it became a Crown Colony. In post-occupation Sarawak, therefore, both colonial and post-colonial (FAO) influences were instrumental in expanding their forest department and the jurisdictional power of forestry.

Although the practice of sending staff abroad for advanced degrees has continued until today, the bulk of forestry professionals in the region are now trained at in-country forestry schools. All the newly independent governments embarked on programmes to create university-level training in forestry. These forestry schools were established with considerable advice and assistance

channelled through the FAO and other foreign aid agencies. By the 1970s the University of Malaya, The Agricultural Institute in Bogor, Gadjah Mada University in Yogyakarta, and Kasetsart University in Bangkok were offering professional degrees in forestry. All these universities today offer graduate degrees, including PhDs in forestry. Moreover, forestry as a specialisation continued to spread to regional schools, particularly in Indonesia. In 2002, for example, it was estimated that some 38 universities and colleges around Indonesia offered forestry programmes.

The key point is that indigenisation did not lead not to isolation, but to an intensified transnationalism in professional forestry. The process strengthened and expanded training, research and publishing institutions. These became, as in the colonial period, both conduits for forestry knowledge from transnational networks and producers of knowledge – integrating local experience into these networks.

Shifts in network institutions and activities can also be traced through the activities of the FAO's technical assistance programmes for forestry. These programmes aimed to standardise forestry practices in Asia, and provide political support for forestry departments seeking to strengthen territorial control over forests. An FAO office was established in Bangkok in 1950⁵⁵ as a regional base for these programmes. As an institution of the United Nations, the FAO's constituency was nation-states. However, it maintained close relations with the British foresters in Malaya prior to Malaya's independence.

Standardisation, of course, had political economic implications: the goal was to promote and increase forest product exports. This was accomplished by establishing standardised grading and nomenclature practices; assisting with forest reconnaissance and inventories for mapping forest boundaries; locating valuable stands of timber and other products; assisting with the expansion of Asian foresters' university-level training through scholarships and curricula design; setting up a data base on research publications; helping arrange technical assistance exchanges; touring forestry operations in various countries; and promoting public education about forestry. The FAO also promoted the discourse of scientific forestry through the specification of common terms, categories and practices of professional forestry. For example, through the establishment of worldwide inventories, conducted every five years beginning in 1947, the FAO set the terms and determined the categories in which 'national statistics' on forest use, reservation, trade and degradation were to be collected. Even the definitions of 'forest', in all its ecological and political iterations, were standardised and normalised through these practices.⁵⁶ Each country produced annual reports for the FAO, based on an FAO template, that documented progress in institutionalising professional forestry and identified needs for further work. These reports were the basis of the first departmental annual reports in Siam and provided the models by which forestry reports were revised in Malaya and Indonesia.

The eager participation by governments in FAO forestry activities and their adoption of models for practising and reporting on professional forestry are indicators of the power of this new forestry empire. We are not arguing that FAO foresters exercised direct control over state forestry departments; rather, the basis of the FAO's influence was the convergence between its recommendations for enhancing the role of professional forestry and the interest of newly independent states in intensifying territorial controls and increasing government revenue. As we discuss below, the specific ways that the broader project of the FAO intersected with diverse state capacities, inter-ministerial relationships, national political economies and local ecologies, continued to produce considerable variation in the degree and kind of FAO influence.

Underlying FAO recommendations for professional forestry was the contention that high levels of investment in forestry could support rapid economic development through logging and other forest product revenues.⁵⁷ The so-called natural forests of Southeast Asia all eventually provided subsidies for rapid economic growth throughout the region, by generating huge revenues that could be invested in other development projects, most of them outside the areas where forest products originated. While much of the early FAO literature argued that supplying the needs of local populations should be one of forestry's prime objectives, in practice increasing restrictions on local uses and an emphasis on increased harvesting rates meant that professional forestry became oriented toward supplying foreign and urban growth needs.⁵⁸ The creation of political forests controlled by governments or their designated concessionaires and contractors, intended to monopolise the profits from large scale forest industry (logging and other enterprises), also had the effect of commercialising certain timber species and criminalising people's access to the free or inexpensive forest products they needed for their daily existence.⁵⁹ Local populations were instead required to obtain forest products through government agencies or markets.

We should be clear that this approach did not mean that FAO foresters condoned the rapid mining of forest resources to subsidise economic growth. Rather, they emphasised contemporary notions of sustained yield, the establishment and mapping of permanent forest estates, and careful state control of exploitation under the assumption that private interests were too short term to ensure sustainable yields. For example, their landmark 1948 report on the state of forestry in Thailand began with these words:

Forestry has a special place among the various forms of land use. A tree takes many years to reach full growth. In forest management it is necessary therefore to look many years ahead. This was the basic justification for state forestry, world-over.⁶⁰

The FAO's approach was to increase production through combining increased investment in silviculture, better protection from unsanctioned human and natural destruction, and expanded but organised exploitation of species and forests that

had been technologically inaccessible prior to World War Two. The net effect was supposed to enhance forest-based income while also achieving forest conservation. It was framed within a rational utilitarian approach to development which found ethical justification for the displacement of local populations in the argument that it served the larger common interest (the greatest good) in national development and modernisation.⁶¹

The FAO devoted considerable attention to public education as a way of securing broader political support for professionalised state control over forests. During the 1950s, the FAO's Working Party on Public Education was chaired by Colin Marshall of the Malayan Forest Service, an indicator of the connections between the receding colonial forestry empire and the emergent FAO 'development' forestry empire. 'Propaganda', or what we would today call 'public relations' or 'environmental education', was spread through articles placed in newspapers and magazines, through forestry education in schools and the dissemination of annual reports about national and international forestry.⁶² FAO forestry practices, institutional developments and discursive strategies contributed to a transnational/universal discourse of forestry and development, which picked up where the colonial-era civilisational discourses left off.⁶³ For example, Colin Marshall's report to the third Conference of the Forestry Commission for Asia and the Pacific, reprinted in an editorial in the FAO's forestry journal *Unasylva* in 1953, stated that:

Forestry is far more than the growing of trees. It is a manifestation of *the only code of ethics by which the world can advance*. Forestry utilizes the natural resources of this world and the same time preserves and improves them for future generations [...]. If people believe in planning for the future and all that it implies, then their feet are set *towards further advances in civilization*.

Posited against these advances of civilisation were not only unenlightened or 'backward' governments and peoples interested only in short term revenues or subsistence, but more specifically what they called "the evil" effects of the Four Horsemen of land misuse: over cutting, roving agriculture, repeated burning and heavy grazing',⁶⁴ all of which supposedly characterised forest-based agriculture. This discourse made forest-based agriculture synonymous with backwardness. For example, according to FAO staff writing in *Unasylva*, shifting cultivation 'corresponds to the Neolithic period through which humanity passed between the years 13,000 and 3,000[B.C.]'.⁶⁵ The FAO appealed to governments and research centres around the world to coordinate their work in overcoming shifting cultivation, while in areas like Northern Thailand, Sarawak and Kalimantan where swidden cultivation and other local uses of the forest were widespread, FAO foresters urged governments to prioritise the elimination of what they characterised as destructive land use practices.

Such actions had to be predicated on a change in the worldview of civil administrators about just what forests and agriculture were. In other words,

the idea that agriculture and forests could be combined – as they were in swidden cultivation or what today might be called ‘agro-forestry’ – had to be displaced. The new view established forests as distinct and territorially separate from agricultural fields, although it also declared certain tree species as being agricultural rather than forest species.⁶⁶ Many of these definitions became standardised transnationally through FAO’s practices of reporting on world trade in agricultural and forest products – their decisions on categories caused administrators all over the world to put their species in the right boxes. Though some categorisations differed within particular nation-states, timber species unequivocally became ‘forest species’. Trees that produced non-timber products such as rubber or cinchona, which had their origins in the forests of another part of the world and were produced in plantations in Southeast Asia, typically became ‘agricultural’.⁶⁷

FAO activities in Southeast Asia, along with intensification of British colonial forestry in Malaya/Malaysia, corresponded with increasing state control of forests and decreased tolerance for local uses of forests in all these sites, with Sarawak experiencing the most radical changes during the British inter-regnum. Despite complaints by foresters about the losses in timber revenues, the Brookes’ regimes from 1841 to 1945 were tolerant of shifting cultivation, the predominant form of ‘native’ agriculture. Post-war British foresters were less amenable. Reports by the Sarawak Forest Department and the Land and Survey Department, invoked the fire and brimstone of anti-shifting cultivation rhetoric in ways unprecedented prior to World War Two. Consider the differences in the tone, language and implied practices from the Sarawak Forest Report of 1939 and that of 1963 (note that ‘dry padi’ refers to shifting cultivation).

It was stated in last year’s report that the policy of compulsory control of shifting farmers was no longer urged and that reliance for forest conservation was being placed on the protection scheme together with agricultural education [...] Expert advice was taken during the year regarding the possibility of improving the methods of the rice farmer as a result of which it is hoped gradually to reduce the destruction of forest caused by the presently too common cultivation of ‘dry’ padi. (1939, p. 5)

Forests are at the mercy of a variety of destructive agencies and of all these the greatest source of damage is generally Man (sic). This is particularly so in Sarawak where the widespread felling and burning of forest for hill padi planting has led to immeasurable loss of timber, degradation of soil and increased flooding in the lower reaches of the rivers. (1963, paragraph 43)

In the long run, these views contributed to the widespread criminalisation of customary forest use and a vision of the shifting cultivator as an elusive law-breaker rather than a farmer or a citizen.

These changes were made possible by the general and broad transformation of ways of seeing these landscapes. The creation of a 'real' category of political forest – separated scientifically (through the imaginary of forestry and later ecology), visually and administratively from agricultural land, helped render swidden cultivation illegal. In other words, rather than being regarded a form of agriculture that manipulated multiple parts of the landscape under different maturities and mixes of vegetative cover, FAO practice urged that swidden agriculture be viewed as 'agriculture out of place' – i.e., as taking place in a forest rather than in a proper field. Although this view of swidden was certainly present in professional forestry networks during the colonial era,⁶⁸ there was considerable variation among different sites in our study in the degree to which this view was absorbed into state practice and policy. After World War Two, FAO forest statistics, management models, classification practices and education, supplemented by similar practices among British foresters in the final years of the colonial empire, helped spread this view to places it had only barely taken hold of during the colonial era. Dissenting voices were marginalised although not completely silenced. Even Conklin's well-known sympathetic study of Hanunoo cultivation, a publication later seen as a landmark for arguments that shifting cultivation can be sustainable, was done as part of an FAO programme to generate knowledge on this subject – in part with a view to stopping it.⁶⁹

Variation

We will finish this section with a brief review of the influences of the FAO in the study sites. This shows that despite the standardising effects of the FAO on forestry practice, the intersections of these practices with local political, economic and ecological contexts continued to generate important variations in forestry practice and the relative strength of forestry departments. We begin with Thailand, where FAO influence was perhaps the strongest, and which at first inspection illustrates primarily convergence – but also dramatically illustrates the way that the ideal forestry model promoted by the FAO was in practice subject to multiple compromises through interaction with site-specific processes.

The turnaround in the status of professional forestry following World War II was striking compared to the pre-war period, when the Thai government sought to maintain some distance from British Empire forestry networks. Immediately after the war, the Thai forestry department began to work very closely with the FAO. This relationship was initiated by the sweeping recommendations of a 1948 FAO Mission,⁷⁰ and sustained through an intensive FAO technical assistance programme. The overlap between the FAO recommendations and actions taken by the forestry department demonstrates the degree to which the Thai forestry establishment was integrated with the FAO from the late 1940s to the early 1960s. For example, the FAO 1948 mission strongly recommended increased re-investment of forest revenues in forestry rather than using revenues

for other needs; FAO progress reports show expenditures rising from 9.6 million baht in 1950 to 24.9 million baht in 1954, and continuing to rise thereafter.⁷¹ The FAO report recommended an increase in field staff; annual reports show a doubling in the size of the forestry department through the addition of 757 new forest officers during 1952–54;⁷² with continual increases thereafter. Today the 1948 FAO report is often cited for its recommendation that 40 per cent of land area should be reserved as forest; opposition from the Ministry of Interior and complicated procedures slowed the rate of reservation during the 1950s, but eventually 42 per cent of national territory was reserved.⁷³

New staff and funding enabled the department to set up district and provincial forestry offices throughout the country, expanding from the previous emphasis on managing the extraction of northern teak. The first step in this programme to take control of forests throughout Thailand was the containment of swidden agriculture. Our oral histories near the Malay border in Southern Thailand indicate that villagers remember the 1950s as a period when the forest department aggressively, though unsuccessfully, sought to contain swidden agriculture.⁷⁴

The adoption of the FAO's forestry for development model was also enabled by the adoption of scientific forestry principles in neighbouring Malaya and Java, and further energised by the modernisation-development euphoria of that time. The pride among Thai state elites in being the first recognised nation-state of the region also articulated with a willingness to adopt the trappings of a modern sort of bureaucratised rule. It is difficult to know if the FAO's recommendations and targets came primarily from the FAO, or whether the FAO was supporting what Thai foresters wanted, or whether it even makes sense to distinguish between the FAO and the Royal Forestry Department during this period. This confluence of discourses and practices is perhaps best described as an 'articulation' in the sense that Stuart Hall and Tania Li have used it⁷⁵ – the coming together of multiple interests through particular discursive and institutional practices in what becomes a historically strategic moment.

Other practices of the FAO at this moment of articulation also converged with the aims of Thai Forestry Department. For example, FAO reports provided technical analysis in support of forestry department efforts to convince the government to close legal loopholes allowing rural people to harvest and use reserved timber; to increase penalties for forest law violations; to impose stricter controls on forest clearing, to hire more forest guards, and to amend reservation procedures so as to minimise inquiries into villagers' rights and claims.⁷⁶ The FAO also supported the forest department and influenced forest policy through the production of knowledge about forests in Thailand. A series of FAO experts appeared in Thailand to do forest inventories,⁷⁷ which provided the basis for logging concessions.

To illustrate this articulation further, consider the important procedure of writing forest reports. Although we do not know who exactly authored these reports (FAO foresters, Thai foresters, or both), the FAO's strong presence in

Thai forestry during the 1950s is indicated by the overlap between the FAO progress reports and annual forest department reports first written during this period. A 1955 Forestry Department publication, which provided the basis for the first annual reports, includes a section on the National Forest Policy.⁷⁸ It reads the same, word for word, as FAO's 1952 Progress Report on Thailand, which is in turn based on a resolution adopted by the FAO Forestry and Forest Products Commission for Asia and the Pacific at its inaugural session in Bangkok in 1950.⁷⁹ The 10-point policy included the reservation targets (40 per cent), as well as statements that forests, especially watershed protection forests, needed protection against 'damage', thus even minor forest produce should not be taken from the latter. It endorsed sustained yield extraction from production forests; called for comprehensive surveys to assist with land use planning; pointed to the need for foresters to have university degrees in forestry to facilitate silvicultural research; and promoted the awakening of public consciousness to the value of the forests and efficient forest administration. The policy perhaps surprisingly stated that production forests were meant to produce primarily for the needs of local populations. At the same time, this policy made it clear that these local populations were *not qualified to manage forests on a sustained yield basis*. In sum, by mobilising concepts such as 'sustained yield', 'watershed protection', 'production forests', 'minor forest produce', 'surveys' and 'land use planning', the FAO provided Thai foresters with the categories of knowledge and professional practice that they needed, both to gain national power and to become members of the new global forestry empire.

Finally, the FAO gave considerable attention to the notion that the Chao Phraya River watershed was repeatedly deforested by the shifting cultivation practices of what they called nomadic hill tribes.⁸⁰ Prior to this period, the government had paid little attention to upland peoples. The FAO recommended that they be introduced to permanent cultivation of temperate and semi-tropical crops. The forestry department launched a project to 'guide and help' swidden cultivators understand the value of permanent cultivation, through establishing demonstration centres and distributing fruit tree seedlings.⁸¹ Although coercion was avoided, and overall little was actually done to contain the activities of upland people during the 1950s, the mobilisation of these terms in government and international forestry reports demonstrates how FAO helped the government come up with the categories and underlying discursive strategies that later became the basis for foreign donor projects, and for the forestry department's eventual efforts to resettle and/or spatially contain upland peoples.

As we have shown,⁸² during the colonial era the Thai state was relatively weak in terms of its capacity to influence how natural resources were managed in much of its territory. The FAO offered a way for the government to simultaneously increase its presence in natural resource management, enhance its territorial power and generate new revenues. In the end, however, the legacy of colonial-era weak forestry department control continued to constrain and

remake professional forestry practice into a hybrid that combined the adoption of the FAO forestry for development model with multiple compromises in the sites of application. Provincial logging companies paid little attention to logging regulations, and large areas of forests were converted into permanent agriculture through settlement organised or endorsed by the Ministry of Interior, producing a situation in which millions of 'illegal' forest occupants were formally organised into administrative villages by the Ministry of Interior.⁸³

Forestry Department practice thus became oriented around a struggle for retaining control over occupied forest territories. An example of the kind of hybridity that emerged were programmes for allocating temporary cultivation rights to occupants of reserved forests. These programmes initially aimed to settle 'nomadic' farmers into forest villages, where they were supposed to plant trees on land classed as degraded though the *taungya* method.⁸⁴ In this post-war, development context, however, *taungya* was reframed through the more benevolent language of social forestry: villagers were to obtain access to development through settlement into proper villages, the provision of temporary cultivation rights, and access to government services. Although several hundred forest villages were established throughout the country, they were able to draw in only a small fraction of the millions of farmers on reserve forest land. In a further twist away from the originally more coercive colonial *taungya* model, the forest village programme was thus replaced with one that provided over 700,000 cultivators on reserve forest land with temporary, five-year land usufruct certificates (called STK certificates), subject to minimal and unenforced tree planting requirements.⁸⁵

FAO influence in Indonesia was strong during the decade of the 1950s, as Indonesia achieved independence relatively early for the region, and put in an early request for the UN Technical Assistance Program to help them develop an integrated forest industries development programme. The influence of FAO there, however, has to be seen in conjunction with the changing political landscape of the region. FAO sponsored the overseas education of several Indonesian foresters in such subjects as aerial surveying, mechanical logging techniques and sawmilling, and it recommended an expansion of local training facilities. An interesting point here is the role of FAO in creating a Southeast Asia-wide sense of forestry – in part by sponsoring foresters from one country to travel to the others. Foresters from Thailand travelled to Indonesia to gain practical training in making forest working plans (as they did for Java) and to study silviculture. The situation in Dutch Borneo/Kalimantan was transformed after World War Two, both through the influence of the Food and Agricultural Organization and the *nationally* centred concern with forests.⁸⁶

Working with both the Forest Service and other government agencies, the FAO assisted in training in general forestry, administration, surveying, timber grading, mechanised logging and saw technics – a process they called the 'rationalisation' of forestry in Indonesia. These programmes contributed to the overhaul

of colonial-era systems of exploration, inventory, exploitation, silviculture and management in Java and outside Java. In Kalimantan, the missions' work on mechanised logging and forest industry were their most important activities in the 1950s. In both Java and Kalimantan the FAO also helped the foresters 'improve...the forest-mindedness of the people', as they put it,⁸⁷ through education and 'propaganda'.

FAO advisors were involved, at least as observers or informal influences, in discussions about the new 'Forest Law for the Outer Territories' which had not yet come into being, and would not, for other political reasons, until 1967. Forests remained under decentralised control, but foresters were appointed by the Central Forest Service to various posts in the Outer Islands, allegedly under the jurisdiction of the local civil authorities. These local officers had to balance the orders they received from Jakarta with the demands of their local jurisdictions.⁸⁸

In Java, plantation forestry begun in the colonial period was continued, with various improvements suggested by FAO. Because of Java's unique position in the region as the most densely populated area, its projected high fuelwood and housing demands, and its significant area of permanent forest, the FAO also felt it was important for forest industries to be concentrated there.⁸⁹ What was then called 'afforestation' was recommended, starting in 'degraded' areas of Java and extending to other islands. Between 1950 and 1955, an inventory of productive forests was completed and working plans drawn up or planned for drawing up in all the forest districts. Technical assistance in sawmilling and industrial development helped upgrade the teak produced in Java. FAO staff oversaw inventories and advised on the expansion and mechanisation of logging, introduced in 1951, even though in Kalimantan this was still limited in some areas by the capital costs of logging equipment and poor accessibility in lowland and swamp forests.

The Indonesianisation of the Forest Service was completed after 1957. No Forest Law for the Outer Islands was yet forthcoming, although the very national sense of forestry and a national forest estate was being forged through many national level meetings and the international meetings of FAO's Asia-Pacific Forestry Commission.⁹⁰

An indirect source of support was the work by the FAO Regional Office for Asia and the Far East in Bangkok. This office developed a standard list of timber species and instructions on grading for the entire region – which was invaluable in Kalimantan's timber trade.⁹¹ Other FAO assistance included industrial surveys for wood products industries, research on 'minor' forest products, especially rattans, the improvement of cooking devices, the adaptation of forest product processing technologies to tropical products, and the interpretation of aerial photos of forests.⁹²

The FAO did not play the same sweeping role in Peninsular Malaya or Sarawak during the 1950s, as it did in Thailand and Indonesia.⁹³ This was because

professional state forestry in Malaya was already strong and Sarawak still ruled by British colonial government. As in Java, the Malayan forestry department had already established territorial controls by the 1950s, a research institute that produced timber classifications, timber processing, silviculture practices and many other activities that the FAO took as its purview with newly independent states in the region. However, the FAO did facilitate the participation of foresters from Malaya in FAO-sponsored forestry networks in Southeast Asia. But in the case of peninsular Malaya, the FAO drew on expertise available in Malaya: British foresters stationed in Malaya were much involved in FAO activities during the 1950s,⁹⁴ including regional meetings and study tours. Malaysian foresters worked with (and for) the FAO through the 1960s and 1970s, although other major development agencies were also providing assistance to Malaysian foresters by this time, for example, the UNDP, the Canadian International Development Agency and even the Peace Corps.⁹⁵

The FAO's most significant activity in Peninsular Malaysia during this period involved supporting the Forestry Department's attempts to defend itself against the state-sponsored territorial expansion of agriculture.⁹⁶ The newly independent government's aggressive programme to expand the area under plantation agriculture forced the forest department to give up considerable amounts of land previously gazetted as reserve forest.⁹⁷ In response, the FAO worked with the department in conducting forest inventories, information used to formulate detailed proposals for creating a Permanent Forest Estate, separate from agriculture and safer from excisions in favour of plantation agriculture. A permanent forest estate was argued by the forestry department as necessary for practising the kind of forestry-for-development promoted by the FAO, enabling investments that would not be lost through conversion to agriculture. The recommendation to create a permanent forest estate was adopted through the National Forest Policy of 1978.

The legacy of this combination of strong colonial forestry and vigorous promotion of the idea of a permanent forest estate during the postcolonial period is that the separation of forests from agriculture is hardly contested today in peninsular Malaysia by the people who were displaced from forests. The main compromise between the ideal FAO forestry model and actual practice has been unsustainably-high rates of logging. This kind of compromise, more often referred to as corruption, is also found in other countries in the region. In West Malaysia, high rates of logging has been a product of collusion between logging companies and the state governments who actually control forest land and logging companies,⁹⁸ but unlike Thailand, it has not been associated with the movement of farmers into political forests.

Sarawak provides another example of how FAO influence was broadly important, even though the change in Sarawak's colonial experiences after World War Two played a critical role in the transformation of forestry. Unlike Thailand and Indonesia, which were both independent by the 1950s, Sarawak

was pulled into the British colonial orbit during this period, and professional forestry was strengthened initially through integration into the British colonial forestry empires. During 1946–63, while Sarawak was a Crown Colony, the government was changed from a loosely administered, low surplus producing, kingdom of the ‘White Rajahs’ with British Protectorate status to a bureaucratically administered, directly ruled colony of the British Empire. The Commonwealth Forestry Network (which published the *Empire Forestry Review*) and the Colonial Development and Welfare [CD & W] Office, based in London, had equal if not more of an impact on Sarawak’s political forests and forestry than FAO per se. As Porritt pointed out, ‘CD & W grants enabled staff levels to be increased and with the aid of maps made from RAF aerial surveys, the Department made rapid progress on demarcating new reserves’.⁹⁹ By the end of 1959, the permanent forest estate was largely complete, with an additional 18 per cent of the country being reserved in the decade covered by the 10-year grant. Added to the approximately 5 per cent reserved before 1942, this rendered some 23.5 per cent of Sarawak’s territory into political forests. Other CD & W grants in 1959 and 1960 paid for the appointments of a Forest Research Officer, a silviculturalist and a government botanist, and for a brand new government herbarium. A Timber Research and Technical Training Depot were established in 1962, at a cost of US\$500,000. All of these new institutions were created just as Sarawak’s colonial era was drawing to a close. The British colonial government left an important legacy, therefore, having legalised, territorialised, professionalised and legitimated forestry in order to bring the colony up to modern standards.¹⁰⁰

Although the primary support for this programme was through the British Empire, Sarawak also participated in the FAO networks. For example, representatives attended the regional meetings of FAO’s Asia-Pacific Forestry Commission.¹⁰¹ Advisors came from FAO to Sarawak in 1958 and 1962 to give advice on trade policy (export of ramin logs was banned as a result of that visit) and sawmilling, respectively.¹⁰² But forestry experts from FAO’s regional headquarters in Bangkok were not invited to the first and second Pan Malaysian Forestry Conferences, only the third (held in Kuching, Sarawak, in 1970). This third conference was also the first time FAO mission members assigned to Malaysia attended.¹⁰³ By this time as well, FAO often found itself working with mission members and funds from UNDP. For example, in 1970, FAO and UNDP combined forces to carry out a Forest Resources Survey under UNDP’s Special Funds Scheme.¹⁰⁴

In this section we have documented how the FAO developed and promoted a single model for professional forestry during the 1950s, with greater success than the colonial forestry empires that preceded the FAO. After the 1950s, the FAO’s dominant influence in training professional foresters and in creating a model for practising professional forestry began to decline as the number of institutions interested in forest conservation and forestry began to grow rapidly.

Even while the FAO was the primary institution responsible for integrating professional forestry into regional and global networks, it often solicited other multi- and bi-lateral aid agencies to fund Southeast Asian forestry projects. Bi-lateral development agencies including USAID and the Canadian International Development Agency provided technical assistance in projects such as forest reconnaissance. The World Bank became a major collaborator with FAO in both Indonesia and Thailand in the 1960s and 1970s. The FAO's long-term legacy, however, is still evident in forestry's legal structures, the planning mechanisms, the forest experts that the FAO sponsored for training abroad, and other underpinnings of professional state forestry that persist in the region.

At the same time, we have also shown how even this model was compromised in practice, although the specific kinds of compromises varied according to local politics, economies and ecologies. The impossibility of actually practising the ideal FAO model of forestry for development in the context of the diverse and messy realities of Southeast Asia has left a legacy of criminalised forest users and uncontrolled logging throughout the region. In most of our sites (the exception being West Malaysia), the politics of forestry continues to produce hybrid models that remix agriculture and forestry, and that promote alternatives to the utilitarian ethics of exclusionary state forestry; these are variously articulated through terms like agroforestry, community forestry, indigenous knowledge, adat rights, buffer zones and so on. Perhaps ironically, the inability of state forest departments to control forest exploitation has also undermined the legitimacy of state production forestry, and contributed to the emergence of transnational 'private' models for forest management as articulated in certification schemes like that of the Forestry Stewardship Council. The FSC is arguably now a contender for hegemonic status on setting 'sustainable forestry' standards, making it, in effect a contemporary successor to German forestry during the early colonial period, and the FAO during the 1950s and 1960s. These new developments show that professional forestry has had lasting impact on the dominant view of 'forests' to one that does not allow for agriculture, and in facilitating the success (albeit compromised and uneven) of forest departments in increasing their control over territories defined as forest throughout Southeast Asia.

CONCLUSION: CONTEMPORARY RELEVANCE OF VARIATIONS IN INSTITUTIONAL HISTORY

Much of the literature on the spread of professional forestry has portrayed it as a uniform constellation of discourse and practices that had similar effects everywhere. In parts 1 and 2 of this paper, we have shown that this was not the case. Instead we have found considerable and often unexpected variations in space and in time, regarding the political influence of foresters, the legibility of their practices and the effects of their practices on regional societies and

ecologies. Our central argument is thus that we need to reconceptualise the making of professional forestry and forestry empires. It is true that we can trace the idea of professional and scientific forestry to mainland Europe, and that German forestry in particular had a profound influence during the initial phase of expansion to the colonies. But by the twentieth century, the theories and practices of professional forestry did not flow exclusively from European centres, or even India, heroically overcoming local resistance to create a forestry model which was broadly similar everywhere. Rather, the ideas that circulated in professional forestry networks were being made and remade in multiple sites, influenced not only by European models, but also by American ecological theories and the creative accommodations made by professional foresters to local political, economic and ecological circumstances. In other words, colonial forestry empires are more accurately understood as linked sets of sites, differentially integrated into intersecting empire networks, in which European models for practising professional forestry were transformed into hybridised practices through interactions with local ecologies, economies and politics. To the degree that these hybridised practices were formalised, they also entered into and circulated through these networks.

After the Second World War, the FAO broadened and deepened the influence of the global networks of professional forestry, and provided the core ideas that linked forestry to the development programmes that characterised the regional political economy. By promoting a standard model of forestry-for-development, encouraging exclusionary forestry laws, strengthening bureaucracies of professional foresters, and institutionalising the very concept of state forestry, the FAO became an empire in its own right. Post-colonial professional forestry reached previously impossible heights in making forests vast territories of legal jurisdiction, generating and appropriating financial resources, although variation and hybridity remained important on the ground. As with the colonial empires, the FAO's reach was uneven, and what was influential in specific sites similarly depended on the creative accommodations made by foresters to local circumstances. Through the 1950s, moreover, the FAO was influential primarily among independent states, and shared influence with the British forestry empire in what is now Malaysia.

Our argument has broader significance for understanding the role of the modern state in claiming and administering natural resources and the human populations contained within particular territorial boundaries. Forestry has constituted an important basis for the territorial states of Southeast Asia, given the parallel and overlapping territorialising imperatives of both forestry and the larger states within which they were embedded. As bureaucratic forms of rule became the norm in colonial Southeast Asia, territorial management of huge tracts of land to be managed as political forests was part of the discipline that constituted modernisation programmes. The FAO, which emerged at the same time as the new nation-states in the region, greatly facilitating this normali-

sation of territorial state forestry.¹⁰⁵ At the same time, the impracticalities of actually practising professional forestry as it was originally envisioned through early colonial era ‘German’ and ‘French’ forestry, and later, through the FAO’s forestry-for-development models, has left a legacy of compromises that have undermined the legitimacy of state forestry. These form the bases of today’s challenges to state control of forests.

NOTES

¹ E.g. Braun, 2000; Miller and Reill, 1996.

² See also Sivaramakrishnan, 1999, 2000; Saberwal, 1996.

³ Sivaramakrishnan, 2000.

⁴ US Forestry was also influenced by German and French models but the ideas were significantly modified in the vast United States. See Fortmann and Fairfax, 1985.

⁵ See also Peluso and Vandergeest, 2001.

⁶ Boomgaard, 1994: 122; Cordes, 1881: 224; Peluso, 1992: 52.

⁷ In India and Burma, German forester Dietrich Brandis established the basic institutions of production forestry (Bryant, 1997; Guha, 1990; Rajan, 1997).

⁸ His name was C. Hummel.

⁹ Peluso, 1992: 52.

¹⁰ As a college, it was known as ‘The State Higher School for Agriculture, Horticulture, and Forestry’.

¹¹ Bussche, 1918.

¹² Rajan, 1997: 344.

¹³ Rajan, 1997: 349; McManus, 1999.

¹⁴ Oliphant, 1932; Rajan, 1997.

¹⁵ Peluso and Vandergeest, 2001; see also Sivaramakrishnan, 1999.

¹⁶ Peluso and Vandergeest, 2001; see also Boomgaard, 1994; Grove, 1995; Sivaramakrishnan, 1999.

¹⁷ Peluso and Vandergeest, 2001.

¹⁸ Somerville, 1931: 49; Menon, 1976.

¹⁹ Oliphant, 1932.

²⁰ Walton, 1932.

²¹ Watson, 1950: 70.

²² Scott, 1998.

²³ Oliphant, 1932: 187.

²⁴ The issue of whether to use natural or artificial regeneration of teak in Java, as well as the issue of pure versus mixed stands was debated in the forestry literature for much of the late colonial period, and into the post war period. In 1865 forest laws and policies, teak forests were meant to be re-established through natural regeneration, while in 1897, new policies allowed for artificial regeneration (Haas, 1903). For selected articles on

these heated debates (some of which may have led to Haas losing his job) see Alphen, 1955; Beekman, 1919; Cremer et al., 1903; Deventer, 1913; Gonggrijp, 1929; Hart and Meded, 1931; Kerbert, 1902; Noltee, 1928.

²⁵ See, e.g. Bryant 1997.

²⁶ Peluso, 1992; Bryant 1997.

²⁷ Bryant, 1997.

²⁸ Peluso and Vandergeest, 2001.

²⁹ Ministry of Agriculture, 1967: 25.

³⁰ Cooke, 1999: 36; Troup, 1940: 378; Watson, 1950: 65.

³¹ Cooke, 1999; Peluso and Vandergeest, 2001.

³² *Malayan Forester*, 1934: 40.

³³ Troup, 1940.

³⁴ National Archives: No. 14082/1593.

³⁵ Sunthornswat, 1977; Bourke-Borrowes, 1928.

³⁶ Spurway, 1937.

³⁷ Spurway, 1949: 88–9.

³⁸ Mid-level professionals held positions of forest architect, forest overseers, and apprentice forest architects, and were a mix of Indonesians and Dutch. These men generally had two or three years of secondary forestry school training (Eurasian) from one of the schools established in the colonies, such as the *Tuinbouwschool* in Bogor, the Middle School of Landuse in Bogor, or one of the Horticulture Schools (*Cultuurschool*) in Malang or Sukabumi. It became possible, however, for a forest *mantri* (overseer) who only had an elementary school education to be promoted to ‘forest architect’ if he had a long and distinguished service record. Lower level employees had titles such as *Opsihter* (Forest Supervisors), *Hoopmantri*, police mantris, forest guards, technical mantris and permanently-employed work foremen (*mandor tetap*).

³⁹ Soepardi, 1974a: 68–73.

⁴⁰ Browne, 1951: 105.

⁴¹ Peluso and Vandergeest, 2001.

⁴² Browne, 1937.

⁴³ See also Sivaramakrishnan, 1999.

⁴⁴ Vereniging van Hoogere Ambtenaren bij het Boschwezen in Nederlandsch Oost-Indie.

⁴⁵ See *Malayan Forester* (1940: 149). For an example, see also Watson’s (1941) critical discussion in the *Malayan Forester* of an article printed in *Tectona* on the Malay States forestry. In the other direction, see Berkhout’s (1890) article in *Tijdschrift voor Nijverheid en Landbouw in Nederlandsche-Indie*, where the author reports on training for forest overseers at the newly established school in Dehra Dun. He discusses curriculum and uses the example of British strategy to exhort his Dutch colleagues to develop schools for forest overseers in Java.

⁴⁶ *Malayan Forester* (1940: 149). For an example, see also J.N. Oliphant, ‘A Glimpse of Forestry in Java’, *The Malayan Forester* 5 (1936): 29–33. Oftentimes, *Tectona* articles provided English summaries expressly for this purpose. Some foresters wrote comparisons

of British and Dutch colonial forestry. For example, in 1926, A.J. Warta compared teak production practices in Dutch and British colonies and Siam. See Warta, 1926.

⁴⁷ *Malayan Forester* (1940: 149).

⁴⁸ Bourke-Borrowes, 1928; Landon, 1947; Sunthornswat, 1977.

⁴⁹ Vandergeest and Peluso, 2006.

⁵⁰ Westoby, 1987.

⁵¹ FAO, 1955, cited in FAO, 1960: 131.

⁵² Vandergeest and Peluso, 2006.

⁵³ Soepardi, 1974a.

⁵⁴ Marshall 1956, 1972: 1. For example, by 1967 the Malaysian Forest Department had eliminated all British foresters from their headquarters in Kuala Lumpur, but many Malayan foresters had degrees from abroad, largely from Australia, England, and Scotland (*Malayan Forester* 1967).

⁵⁵ Leloup, 1957.

⁵⁶ See the report on the FAO's Third World Forest Inventory in Unasyuva (FAO, 1960: 131–50.)

⁵⁷ Westoby, 1987; Monroy, 1959: 155; FAO, 1948b.

⁵⁸ Dauvergne, 2001; Cooke, 1999; Monroy, 1959: 155, 157; Westoby 1987.

⁵⁹ Peluso, 1992; Dove, 1985.

⁶⁰ FAO, 1948a: 73.

⁶¹ For example: 'A sound national forest policy aims at the rational development and exploitation of forest resources on the principle of the greatest good for the greatest number' (FAO, 1960: 131). See also Vandergeest et al., 2006.

⁶² Marshall's (1956, 1972) instructions at the second annual session of the FAO's Asia-Pacific Forest Commission in 1952 provide an illustration of the FAO's broad-based and concerted approach to public education. He suggested that member governments of the FAO consider establishing instructions for students in all universities and teacher colleges on the importance of natural resource conservation and development, including forest conservation; work with UNESCO to plan for education in renewable natural resource development, and initiate a coordinated service of posters and other simple information material for reproduction in all languages, to spread the aims and ideals of sustained yield development of forests and other natural resources. Except for the change in language, these recommendations are not very different from today's public education around sustainable development and forest conservation.

⁶³ Vandergeest and Peluso, 2006.

⁶⁴ FAO, 1948b.

⁶⁵ FAO 1957: 9.

⁶⁶ Peluso and Vandergeest, 2001.

⁶⁷ Ibid.

⁶⁸ Rajan, 1997.

⁶⁹ FAO, 1960.

⁷⁰ FAO, 1948a.

⁷¹ FAO, 1952; 1954.

⁷² FAO, 1954.

⁷³ Vandergeest and Peluso, 2006.

⁷⁴ FAO, 1948a; FAO, 1954.

⁷⁵ Hall 1996, Li 1996: 153.

⁷⁶ FAO, 1954; FAO, 1952.

⁷⁷ Loetsch, 1957; Gartner, 1963.

⁷⁸ Thirawat, 1955.

⁷⁹ FAO, 1952.

⁸⁰ FAO, 1952; also FAO reports on forestry in Thailand published in *Unasyuva* during this period. Many upland ethnic minorities (often called hill tribes) were no more mobile than lowland 'Khon-muang' peoples.

⁸¹ Samapuddhi, 1955.

⁸² Vandergeest and Peluso 2006; Peluso and Vandergeest 2001.

⁸³ Vandergeest, 1996.

⁸⁴ Watanabe et al., 1988: 170; Boonkird et al., 1984: 88.

⁸⁵ This programme ended in 1993, replaced by a programme that forced a reluctant forestry department to transfer occupied land deemed suitable for agriculture to the Agricultural Land Reform Office for permanent allocation to farmers.

⁸⁶ FAO 1955: 23–5; Monroy, 1959: 155.

⁸⁷ FAO, 1955: 1.

⁸⁸ GOI, 1986.

⁸⁹ Monroy, 1959: 156–7.

⁹⁰ With Sukarno's implementation of Guided Democracy, the radicalisation of Indonesian party politics of the late 1950s and early 1960s, and the eruption of numerous political challenges and insurgencies against national power occupying much of Sukarno's time and the budget, forestry issues seemed to fall by the wayside, though foresters continued to meet and make plans that would eventually be implemented after Suharto took over in 1966.

⁹¹ FAO, 1955: 15.

⁹² Monroy, 1959: 159; Hannibal, 1952.

⁹³ During the 1950s, Malayan forest policy was strongly influenced by the Emergency, as we will outline in another paper.

⁹⁴ FAO, 1952, and other FAO progress reports. Colin Marshall, Conservator of Forests for Malaya, for example, headed the FAO committee on public education in forestry, while Wyatt-Smith chaired the silviculture subcommittee as of 1960.

⁹⁵ Ray, 1968.

⁹⁶ This expansion mobilised discourses of promoting the welfare of rural ethnic Malays, in this highly racialised political system.

⁹⁷ Nor, 1988.

⁹⁸ Cooke, 1999.

⁹⁹ Porritt, 1997: 218.

¹⁰⁰ Our conclusion is quite different from that of Porritt (1997: 225), who states 'During the British era forest policies were not altered in direction or intent.' But Porritt's own data

believe the fact that these kinds of accomplishments were impossible under the Brookes' administration. He goes on to cite the following facts that show how significantly different the nature of forestry was in the British period compared to the Brookes' period: 'nearly one-third of the forests were gazetted as permanent forest', 'firm control over the forest's timber resources had been established through a licensing system, supported by mandatory working plans for licensees aimed at providing sustained timber yields by natural regeneration of economic species'. The budget of the FD went from US\$75,111 in 1947 to more than 1 million in 1962. Timber processing was begun, and the log export market exploded, with Sarawak at its centre. (paraphrased from Porritt, 1997: 225). In addition, a revised Forest Ordinance and new Forest Rules were instituted in 1954, replacing those of 1934. While the Commonwealth Forestry Conference of 1954 issued a policy statement advising the 'consolidation' of existing policies rather than their revision (Porritt, 1997: 219), in practice these other developments eclipsed the status quo in forests and forestry before the war. The real power of the forestry sector in Sarawak was undeniably born during the British colonial period, and not before.

¹⁰¹ See Browne, 1951.

¹⁰² Porritt, 1997: 222–3; Smythies, 1960: 69.

¹⁰³ 'Editorial', *The Malayan Forester*, 1970: 279.

¹⁰⁴ Ya'Kub 1970: 285.

¹⁰⁵ Bryant, 1997; Grove, 1995; Hay, 1994; Peluso, 1992; Peluso and Vandergeest, 2001; Saberwal, 1996; Scott, 1998; Sivaramakrishnan, 1997; Sivaramakrishnan, 1999; Thompson, 1975.

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