

## Empire forestry and its failure in the Philippines: 1901–1941

Brendan Luyt

*From the mid-nineteenth century onwards there developed in the British colonies a distinctive set of forestry practices that came to be described as Empire forestry. These practices grew out of the same milieu as imperialism, and had their earliest expression in British India. Gregory Barton argues that Empire forestry also heavily influenced the forestry of the United States and that from there it spread to the Philippines. However, this article argues that the variant of Empire forestry developed in the Philippines was not particularly successful as its proponents failed to adequately adapt it to local social and political conditions.*

From the mid-nineteenth century onwards there developed in the British colonies, in particular in British India, a distinctive set of forestry practices that came to be described as Empire forestry. These practices grew out of the same milieu as imperialism. Gregory Barton argues that Empire forestry also heavily influenced that of the United States, from where it spread to the Philippines. This article argues, however, that the variant of Empire forestry developed in the Philippines was not particularly successful as its proponents failed to adequately adapt it to local social and political conditions.

According to Barton, Empire forestry was a globally successful movement for a number of reasons. It represented a resolution of ‘the tension between romantic preservationist notions and laissez-faire policies’ dominant through much of the latter half of the nineteenth century.<sup>1</sup> It also held great attraction for the fledgling profession of forestry because of the importance it attached to forests as the protectors of ‘soil, water and ... the climate of entire continents and regions’.<sup>2</sup> But what also made Empire forestry successful was that it was relatively flexible and hence able to adapt to local conditions rather than impose wholesale European forestry ideals.

Barton himself elaborates on the elements of the local that made possible the success of the India Forest Service. He notes that it was recognised early on that the large size of Indian forests made the intensely managed forests of Europe an impossible model to follow. Instead the aim of Indian forestry was to prevent further damage

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1 Gregory A. Barton, *Empire forestry and the origins of environmentalism* (Cambridge: Cambridge University Press, 2004), p. 1.

2 *Ibid.*, p. 1.

and allow natural regeneration to replace the stock.<sup>3</sup> In this regard, for instance, Indian foresters developed the fire line — a technique infrequently used in Europe, but useful in India's vast spaces as protection against forest fires.<sup>4</sup> British Indian forestry also made attempts to recognise informal and communal forms of land rights.<sup>5</sup> And its process of forest demarcation involved the villages located in or near forested areas. These communities were invited to meetings to discuss land boundaries, and, at the end, to give their assent to them.<sup>6</sup> Grazing was tolerated, although viewed negatively due to its effects on forest growth,<sup>7</sup> demonstrating again attention to the local in the development of a distinctive British Indian forest knowledge.

Certainly it could be argued that British Indian forestry knowledge-making excluded much of local silvicultural relevance. And it is clear that it also relied heavily on force, rather than enlightened policies stemming from an appreciation of the forestry and agricultural knowledge of local cultures.<sup>8</sup> The point, however, is that in order to earn itself the title 'Empire forestry' and a reputation as a model for other authorities to follow, within and outside the British Empire, the Indian Forest Service had to show some evidence of an ability to manage forests. Key to that ability was how its representatives handled the distinctive forestry conditions to be found in each colony or country. Rather than depend upon a presumed universal model of scientific forestry, they created their own knowledge based on an understanding of local conditions.

The importance of locally aware scientific forestry knowledge can be traced not just in British India, but in Southeast Asia as well. In an analysis of the discourse of deforestation in the Dutch East Indies, for example, Galudra and Sirait note how it reflected local political conflicts between the Forest Service and the Interior Administration, and more widely between the two dominant contemporary currents of Dutch thought in the colony.<sup>9</sup>

Vandergeest and Peluso share the view that Empire forestry practices were adapted to local conditions and demonstrate their claim through a comparative analysis of scientific forestry as practised in British Malaya, Thailand, and the islands of Java and Borneo (Dutch East Indies). They develop the notion of 'empires of forestry' to stress the varied conditions which colonial foresters encountered and had to adapt to. They view such variations in forestry practices as resulting from local political, economic and cultural contexts, revolving around conflicts over territorial control of the forest, resource extraction and labour as well as budget struggles. Only after the Pacific War, they argue, was a more universal conception of forestry knowledge developed under the auspices of the UN Food and Agriculture Organisation (FAO).<sup>10</sup>

3 Ibid., p. 72.

4 Ibid., p. 87.

5 Ibid., p. 65.

6 Ibid., pp. 76, 80.

7 Ibid., p. 90.

8 Vandana Shiva, *The politics of survival: Conflicts over natural resources in India* (Tokyo: United Nations University Press, 1991).

9 G. Galudra and M. Sirait, 'A discourse on Dutch colonial forest policy and science in Indonesia', *International Forestry Review* 11, 4 (2009): 524–33.

10 Peter Vandergeest and Nancy L. Peluso, 'Empires of forestry: Professional forestry and state power in Southeast Asia, Part 1', *Environment and History* 12, 1 (2006): 31–64.

In the case of the Philippines Greg Bankoff argues along similar lines to Vandergeest and Peluso, namely that Empire forestry was not imported wholesale into the American colony from either Europe or North America.<sup>11</sup> Foresters in the Philippines ‘... pragmatically improvised new [policies] that were a blend of European, American and local expertise, “hybrid practices” more suited to an administratively and scientifically unstable tropical setting’.<sup>12</sup> Bankoff suggests that two differences in particular stand out. The first was the lack of ‘compromise trade-offs or acts of political sleight-of-hand’ that was needed in the United States to effect forest conservation in a system ‘involving a complex set of relationships that included federal government, states’ rights, and industry’ plus ‘public opinion of individual pressure groups such as John Muir and the Sierra Club’.<sup>13</sup> The second difference Bankoff identifies between the Philippine and the Empire model of forestry is that the Philippines reflected an American conservationist mind-set that saw natural resources in utilitarian terms best exploited under a regulated capitalism: ‘What made this variant of scientific forestry so “American”, however, was its particular sensibility to the rhetoric of the market’.<sup>14</sup>

While Bankoff was right to note the hybrid nature of Philippine scientific forestry, he does not recognise that the combination failed to adequately incorporate or address the local context, perhaps because his work addresses the very early period of the Bureau’s history, its first five years or so. He does mention the growing local unpopularity of the Bureau,<sup>15</sup> but there are other indications that the fit between

11 Before the advent of the Americans, the Spanish government in the Philippines had its own *Inspeccion general de Montes*, established in 1863. Perhaps its longest lasting achievement was the entrenchment of the notion that foresters should be in charge of deciding whether land was more valuable for agriculture or forestry, a principle ‘which American foresters gladly inherited later on’ (Dennis Roth, ‘Philippine forests and forestry: 1565–1920’, in *Global deforestation and the nineteenth century world economy*, ed. Richard Tucker and John F. Richards [Durham, NC: Duke University Press], p. 41). Nano, a forester writing in the 1950s, notes that the Americans also were able to take advantage of experienced forest personnel trained under the Spanish, rehiring them as part of the new Bureau of Forestry in the early years of its existence. He also records that the Spanish forestry regime left few forest maps and no working plans or timber inventories, although the forest laws were found to be ‘excellent’ (Jose Nano, ‘Brief history of forestry in the Philippines’, *Philippine Journal of Forestry* 8, 1–4 [1951]: 22–3), although Roth concludes that ‘historians have found scant evidence that the [Spanish] bureau actually carried out this mandate or had any noticeable effect’ (Roth, ‘Philippine forests and forestry’, p. 41). Potter concurs with Roth’s assessment, writing that ‘the Spanish foresters in the Philippines, being largely cut off from ideas on forest management and short of personnel, were unable to evolve a system which combined the commercial needs of the market with their conservation ethic’ (Lesley Potter, ‘Forests versus agriculture: Colonial forest services, environmental ideas and the regulation of land-use change in Southeast Asia’, in *The political ecology of forests in southeast Asia: Historical perspectives*, ed. L. Tuck-Po, W. de Jong, and A. Kenichi [Kyoto: Kyoto University Press, 2003], p. 62). A dissenting voice is provided by Bankoff who argues that the destruction of most of the records of the *Inspeccion general de Montes* in a fire in 1897 has meant that historians have underestimated its capabilities (Gregory Bankoff, ‘A month in the life of Jose Salud, forester in the Spanish Philippines’, *Global Environment* 2, 3 [2009]: 28). Nevertheless, this lack of records effectively meant that there was ‘a silvicultural “tabula rasa” on which the incoming Americans could experiment’ (Potter, *Forests versus agriculture*, p. 62).

12 Gregory Bankoff, ‘Breaking new ground? Gifford Pinchot and the birth of Empire forestry in the Philippines’, *Environment and History* 15, 3 (2009): 371.

13 *Ibid.*: 383.

14 *Ibid.*: 384.

15 *Ibid.*: 383.

scientific forestry and local context was not strong, resulting in the sidelining of the Bureau and its agenda.

The key indication that this was the case is the continued underfunding of the Bureau of Forestry throughout the pre-war period. In its 1919 annual report,<sup>16</sup> for example, the Director lamented the low salaries paid to foresters who, he noted, usually were university educated, and in many cases undertaking 'dangerous and physically demanding work'. He also noted that, adding insult to injury, 'the salaries paid in other bureaus are in general higher than those paid in the Bureau of Forestry'.<sup>17</sup> This was a long-standing issue. In a letter to the President of the Philippine Senate, the director of the Bureau wrote in 1921, 'as time went on it was natural that complaint would be made about their positions as compared with positions of the same technical character in other branches of the Government, where higher salaries and more congenial work could be had'.<sup>18</sup> He was making the same point in 1933: 'It is an accepted fact that the forestry men are among the poorest paid employees in the Government, if not the lowest paid at present'.<sup>19</sup>

Furthermore, Philippine forestry was underfunded compared to that of its regional neighbours. In a memorandum dated 7 September 1927, the Director of Forestry provided a table comparing the money spent on forestry per hectare of forest land. Java leads the list with 0.64 pesos per hectare, followed by India at 0.45 pesos. The Philippines, by contrast, was found to spend only 0.009 pesos per hectare.<sup>20</sup> This underfunding resulted in a less than adequate presence of forestry officials in the field. In 1912, for example, the Philippines had a total of 35 foresters and rangers in its employ, compared to India's 9,515 personnel and this for a forest area only slightly larger than that of the Philippines.<sup>21</sup> The underfunding created a negative dynamic, the exodus of skilled forestry workers to the private sector and overseas forestry departments. Of the 335 graduates of the School of Forestry at the University of the Philippines from 1912 to 1927, close to one-third had resigned from the Bureau (the Bureau hired the majority of the graduates immediately after their graduation).<sup>22</sup>

16 The Bureau's annual reports which are relied on throughout this article provide the only comprehensive source of information on its history — most of its documentation was unfortunately destroyed during the Second World War. Relying mostly on annual reports does open my account to criticism. Although annual reports ostensibly aim to report in as neutral a fashion as possible the activities and state of an institutional entity there are great incentives for their authors to overlook the negative and accentuate the positive. The lopsided coverage would normally be a disadvantage, but in this case it is not. The fact that I am able to develop a sustained negative reading of the Bureau's work despite the positive slant the annual reports were likely aimed at providing readers suggests that my criticism is, if anything, understated.

17 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1919* (Manila: Bureau of Printing, 1920), p. 6.

18 Letter from Arthur Fischer to Senate President Quezon, 22 Apr. 1921, Quezon Papers, Bureau of Forestry file, National Library of the Philippines, Manila (henceforth Quezon Papers).

19 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1933* (Manila: Bureau of Printing, 1934), p. 9.

20 Memorandum from Arthur Fischer to Senator Alegre and Representative Confesor, 7 Sept. 1927, Quezon Papers.

21 Letter from George Ahern to Hon. Manuel Quezon, Philippine Delegate, House of Representatives, 19 Feb. 1913, Quezon Papers.

22 Memorandum from Fischer to Alegre and Confesor, 7 Sept. 1927.

Given the sidelining of the Bureau and its mission that these numbers suggest, it is clear that Philippine forestry, unlike its counterpart in British India, was unlikely to succeed in creating a very successful Empire forestry variant. In the rest of this article I will demonstrate that Philippine forestry under the Americans attempted to follow the Empire forestry model, as outlined by Barton, but unsuccessfully. What accounts for this abject failure was the American foresters' inability to adjust the model to incorporate key elements of local knowledge, specifically the colony's intertwined economic and political dynamics.

### **Empire forestry in the Philippines**

The American colonial government never attempted to adopt the Indian forestry model in a wholesale way. Empire forestry, although having origins in the Indian experience, was premised on the notion that conditions in Indian forests were substantially different from those in Europe and for that reason the local needed to be incorporated in any scheme of forestry that hoped to be successful in creating a viable, long-term industry. But as Barton elaborates, there were commonalities within the forest policies of the British colonies and dominions: a concern for the market valuation of forest products, the need to map forest areas and settle local claims, the concept of the 'working plan', a view that fire was the enemy of forests, and a concern for logging efficiency. Given the existence of locally adapted variants of the Empire forestry model at work in the world, it also stands to reason that some of these variants would be more successful than others. The rest of the article addresses this claim, arguing that the Philippine variant of Empire forestry, while trying to adapt itself to certain aspects of its local context, failed in the end to produce a set of policies that could create a sustainable forestry regime. But before discussing the local context that bedevilled the American foresters' attempts, the following sections present evidence to illustrate how the Bureau tried to develop its own variant of Empire forestry.

#### *Market valuation of forests and minor forest products*

Barton argues that the British were able to impose a new definition of forests on the people of India, persuading them 'to view the forest as a potential treasure house rather than an obstacle to civilisation'.<sup>23</sup> This involved creating market values for forest land by establishing a system of royalties for the use of forest products, identification of uses for previously 'under-utilised' woods, and joint ventures to exploit these same woods. I would also include Barton's category of encouraging the use of minor forest products here as well. With the exception of joint ventures all of these strategies figured heavily in the scientific forestry of the Philippines and the knowledge it produced.

The Philippines before the US invasion did have a local lumber industry that catered to the construction needs of a rapidly expanding urban population during the nineteenth century, especially in Manila.<sup>24</sup> But as well as being confined to domestic use, this industry apparently limited itself to a number of the more durable

23 Barton, *Empire forestry*, p. 75.

24 Joseph Burzynski, 'The timber trade and the growth of Manila 1864–1881', *Philippine Studies* 50, 2 (2002): 168–92; Greg Bankoff, 'One island too many: Reappraising the extent of deforestation in the Philippines prior to 1946', *Journal of Historical Geography* 33, 2 (2007): 314–34.

woods<sup>25</sup> that could withstand white ant attacks and the tropical climate.<sup>26</sup> In a tropical forest where ‘a stand containing forty species or more to the acre is not uncommon’, this meant that loggers were very selective, removing only a few choice logs from each area.<sup>27</sup> This selectivity could still be profitable as long as the industry was run on a small scale and with mostly manually operated equipment. But the American foresters viewed selective logging as not making the best use of forest resources. For them highly capital-intensive, mechanical production was an essential component of a modern timber industry. This would not only create a viable domestic industry (which in its early years had actually to import US lumber due to the unsettled conditions in the Philippines), but pave the way for a profitable export trade.<sup>28</sup> But companies operated on this basis could not survive by selectively cutting only a few favoured species and the Iliolo Electric Company’s early attempts failed for this very reason.<sup>29</sup> As early as 1901, in a discussion of how the Philippine forests were to be logged, it was noted that the large number of unknown species would pose problems for the industry and that the ‘duty of finding a market for such varieties devolves upon the forestry bureau’.<sup>30</sup>

One mechanism to help overcome market resistance to these lesser-known species was pricing. The Bureau divided tree species into six groups and charged differential fees to cut each.<sup>31</sup> The more widely known and valuable woods were of course charged at a higher rate than those less well known. In this way, the Bureau hoped to encourage both loggers and consumers to develop wider tastes in timber. Alongside pricing, the Bureau used overseas trade fairs as a means of promoting Philippine woods. The first of these was the Pan-American Exhibition held in Buffalo, New York, in 1901 at which the Bureau displayed a hundred species of Philippine woods.<sup>32</sup> In 1905, the Bureau displayed a variety of forest products at the Louisiana Purchase Exposition at St. Louis, Missouri, products which were ‘a revelation to the many visitors’.<sup>33</sup> Fourteen years later, the annual report proudly recorded that the Bureau had won a grand prize at the Panama Pacific Exposition in San Francisco. One hundred thousand visitors were said to have visited the exhibit, which acquainted them ‘with the beautiful woods of the Philippines and corrected the erroneous idea of

25 Gregorio Zamuco, *Development of logging in the Philippines* (Los Baños: University of the Philippines College of Forestry, 1966), p. 2.

26 George Ahern, *Special report of Captain George P. Ahern in charge of Forestry Bureau, Philippine Islands* (Washington, D.C.: Division of Insular Affairs, War Dept., 1901), p. 173.

27 George Ahern, ‘Opportunities for lumbering in the Philippine Islands’, *Proceedings of the American Forest Congress held at Washington, D.C. January 2 to 6, 1905* (Washington, D.C.: H.M. Suter for American Forestry Association, 1905), pp. 173–88.

28 Carlos Sulit, ‘Brief history of forestry and lumbering in the Philippines’, *Journal of the American Chamber of Commerce* 39, 1 (1963): 18.

29 H.D. Everett and Harry Nichols Whitford, *A preliminary working plan for the public forest tract of the Insular Lumber Company: Negros Occidental*, Bureau of Forestry Bulletin no. 5 (Manila: Bureau of Forestry, 1906), p. 666.

30 Ahern, *Special report*, p. 10.

31 *Ibid.*, pp. 11–12.

32 *Ibid.*, p. 11.

33 Ahern, *Opportunities for lumbering*, p. 176.

their unavailability ...'.<sup>34</sup> Seventy-five planks and twelve logs were displayed at the Paris International Colonial and Overseas Exposition in 1930.<sup>35</sup>

Before the outbreak of civil war, China was seen as a particularly large market for Philippine forest products. This was especially the case in 1915 and 1916, years of European war and hence expensive trans-oceanic shipping rates. The annual report for 1915 noted that 'a great deal of propaganda work had been conducted to win over this market, including the distribution of specimen sets and publications in journals'.<sup>36</sup> A year later, L.R. Stadtmiller, Chief of the Division of Forest Management, was sent to China to investigate the market and write a report for the Philippine lumber industry.<sup>37</sup> Japan was also seen as a potential market for Philippine lumber. In 1924, using funding from the Philippine Lumberman's Association, a forester was sent to Japan to explore that country's need for wood products.<sup>38</sup>

But the Bureau's major activity in regard to creating new markets for Philippine woods was in the field of research. One of its first activities was to establish a timber-testing laboratory which was quickly put to work collecting details of the mechanical properties of key Philippine woods.<sup>39</sup> Such data was essential to convince buyers, especially in foreign markets, that Philippine timber was as good as, if not better than, timber from more established markets in North America. Wood preservation experiments started in 1921 in conjunction with the Atlantic, Gulf and Pacific Company, while a year later the Bureau reported on the fire resistance of selected Philippine woods, hoping that the work would be of use to fire insurance companies.<sup>40</sup> The sugar industry, a growing economic force in the Philippines at this time, was also the recipient of Bureau efforts to identify suitable woods for its use.<sup>41</sup> Testing for strength against marine borers,<sup>42</sup> publishing lists of woods for special purposes (including bowling pins), and experimentation with charcoal production<sup>43</sup> were a few of the other research activities the Bureau engaged in its pursuit of new markets for Philippine timber.

34 W. Sherfese, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1915* (Manila: Bureau of Printing, 1916), pp. 64–5.

35 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1930* (Manila: Bureau of Printing, 1931), p. 541.

36 Sherfese, *Annual report 1915*, p. 73.

37 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1916* (Manila: Bureau of Printing, 1917), p. 41.

38 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1924* (Manila: Bureau of Printing, 1925), p. 66.

39 George Ahern, *Annual report of the Director of Forestry, fiscal year 1905–06* (Manila: Bureau of Forestry, 1906), pp. 13–14.

40 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1921* (Manila: Bureau of Printing, 1923), p. 57; Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1922* (Manila: Bureau of Printing, 1923), p. 58.

41 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1927* (Manila: Bureau of Printing, 1928), p. 73.

42 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1928* (Manila: Bureau of Printing, 1929), p. 80.

43 Constantino Rabaya, 'The manufacture of charcoal by the Japanese process', *Makiling Echo* 3, 3 (1924): 20–28.

The Empire forest model was not just concerned with timber, but with other products of the forest lumped together under the term ‘minor forest products’. The Philippine Bureau of Forestry was likewise concerned with promoting these products, and from early in its history. It published a series of bulletins on the subject over the course of 1918 and 1919. There were also abundant articles on non-timber forest products in the *Makiling Echo*, the Bureau’s staff magazine, including a how-to guide to establishing fish ponds in mangrove swamps, notes of studies on the extraction of sap from the buri palm (*Corypha elata*), wild fibre plants, edible birds’ nests, and a particular kind of edible forest fungus.<sup>44</sup>

Creating new markets and in fact stimulating the expansion of a modernised industry, was one of the Bureau’s ‘success’ stories. By 1939 the Philippines lumber industry was valued at US\$15.5 million, the fifth largest capitalisation in the country. It was the fourth largest industry in terms of value produced and second in terms of employment.<sup>45</sup> Of course, in the long term this ‘success’ was an abject failure as the industry was not sustainable; rather what was practised was forest mining, not conservation. And despite its valiant efforts it appears that the Bureau was not as successful as it would have wished in developing a market for the vast range of species on offer in the Philippine forests. We are periodically reminded of this in the pages of its annual reports. In 1917, one of the main offences committed by the logging licensees was the cutting of under-sized trees of the most popular species despite there being ‘a number of durable trees in the lower groups which will serve equally well ...’.<sup>46</sup> In 1923, one of the District Foresters reported that the only trees cut were kalantas (*Toona calantas*), guijo (*Shorea guiso*), narra (*Pterocarpus indicus*), ipil-ipil (*Leucaena leucocephala*), tindalo (*Azelia rhomboidea*) and supa (*Sindora supa*) because these were the only woods in demand.<sup>47</sup> Uneven demand for certain species continued, however, with the 1927 annual report noting that despite there being ‘many other species of woods equally strong and durable’, people wanted only ipil-ipil, molave (*Vitex parviflora*), yakal (*Hopea astylosa*), and guijo for construction purposes.<sup>48</sup>

#### *Mapping nature and settling claims*

In order to implement the forestry programme, accurate maps were needed in order to delimit areas of forest and non-forest. In British India, mapping on a large scale began as early as the latter half of the eighteenth century. The Indian Forest

44 Alejandro de Mesa, ‘Fishponds in the forests’, *Makiling Echo* 2, 4 (1923): 21–8; Ambrosio Galisim, ‘Notes on the extraction of buri sap in the vicinity of Mount Arayat, Pampanga’, *Makiling Echo* 4, 1 (1925): 13–14; Anonymous, ‘The wild fiber plants of the Philippines’, *Makiling Echo* 4, 3 (1925): 32–4; B.L. Roque, ‘Edible birds’ nests’, *Makiling Echo* 6, 1 (1927): 24–6; Juan Fontanoza, ‘Amorphophallus: Its cultivation and preparation for human food in the province of Leyte’, *Makiling Echo* 10, 1 (1931): 32–4.

45 Richard Tucker, *Insatiable appetite: The United States and the ecological degradation of the tropical world* (Berkeley: University of California Press, 2000), p. 381.

46 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1917* (Manila: Bureau of Printing, 1918), p. 14.

47 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1923* (Manila: Bureau of Printing, 1924), p. 37.

48 Fischer, *Annual report 1927*, p. 73.

Service elaborated on the maps produced by the Survey of India, marking boundaries by using natural or artificial features such as pillars, ditches or railroad lines. They also recorded information on the types of forest found, tree ages and soil conditions. Timber valuation was also determined. By 1899, 41,021 square miles had been mapped in this way.<sup>49</sup>

Maps facilitated the identification of areas of private and communal landownership both of which were recognised by the forest service of British India. After a locality had been surveyed, the villagers were called to a meeting to contest forest boundaries, and once these conflicts had been adjusted, all parties signed the resulting agreement.<sup>50</sup>

In the Philippines, mapping and claims settlement were also seen as of the 'first importance'.<sup>51</sup> By 1915, trail notes taken by forest officers on patrol were being integrated into base maps with scales of 1:20,000 and 1:100,000<sup>52</sup> and by 1918 a new map of Luzon was ready for printing at a scale of 1:400,000.<sup>53</sup> This was followed a few years later by a similar scaled map of the Visayas and Mindanao.<sup>54</sup> But making maps was only the first step in delineating land meant for permanent forests as opposed to land that could be made available for agricultural purposes. And it was here that the Bureau ran into significant problems.

In its early days the Bureau needed to accommodate the provision of the Public Land Act of 1904, which allowed homesteaders to choose parcels of land and then required the Bureau of Forestry to decide whether the land was more suitable for agriculture or forestry. The ad hoc nature of these claims meant that much of the forest officers' time was taken just travelling to areas under consideration. After the New Public Land Law of 1919 was passed, the onerous nature of this task was ameliorated as the law encouraged homesteaders to move to already surveyed lands which could be examined by the Bureau of Forestry on an en bloc basis.<sup>55</sup> But problems persisted. In many instances land conflicts developed between rival claimants to a piece of land or between the Bureau and a claimant. Although the Bureau believed that most of these claims had no legal validity, being based on tax payments or past usage of the land as *kaingin* (temporary fields),<sup>56</sup> the ensuing battle for ownership was time-consuming and often futile. The Bureau itself noted in 1921 that once such settlements were established in public forests it was almost impossible to legally evict the settlers or even to stop them from extending the land under cultivation.<sup>57</sup>

There was also the problem of coordination with the Bureau of Lands, the agency responsible for the land after it was certified by the Bureau of Forestry as being better for agriculture. If the Bureau of Lands didn't act quickly after a block of land was

49 Barton, *Empire forestry*, p. 81.

50 *Ibid.*, p. 80.

51 Ahern, *Annual report 1905–06*, p. 10.

52 Sherfese, *Annual report 1915*, p. 16.

53 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1918* (Manila: Bureau of Printing, 1919), p. 53.

54 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1920* (Manila: Bureau of Printing, 1921), p. 65.

55 Fischer, *Annual report 1919*, p. 48.

56 Fischer, *Annual report 1916*, p. 17.

57 Fischer, *Annual report 1921*, p. 67.

released by the Bureau of Forestry, the boundary markers would be moved or lost.<sup>58</sup> In the 1930s the problem of coordination attained new heights as it was repeatedly discovered during patrols that the Bureau of Lands was authorising homesteads on lands previously certified to be for forest use. Many of these were in the Isthmus reserve in Tayabas province, where the 1931 annual report noted that ‘all the timberland blocks’ have scattered agricultural holdings.<sup>59</sup>

Finally, it is important to note the sheer scale of the task that the Bureau, with its limited resources, had on its hands. Despite an outwardly optimistic appraisal of its own efforts, it is possible to read between the lines to perceive a world where foresters were overwhelmed by the desire for agricultural land. Perhaps the first clear indication is to be found in the 1915 annual report where it is noted that while 7,093 parcels of land were inspected 2,243 were pending inspection.<sup>60</sup> Even at this date, the Bureau’s resources could not keep up with the demand. This situation continued over the years resulting in the Bureau devising various coping mechanisms. In 1916, for example, it introduced the concept of a forest zone, an area that was to be distinguished by more detailed mapping and surveying than the regular public forests.<sup>61</sup> The idea seems to have been to prioritise certain areas seen as especially vulnerable. The area around Mount Isarog in Camarines Sur was identified as one such case due to the expansion of the abaca industry,<sup>62</sup> while the clearing of land for coffee plantations was seen as requiring a forest reserve in the more remote mountainous areas of Batangas and Tayabas in 1922.<sup>63</sup>

But despite concentrating efforts on certain forested areas, the Bureau was still hard-pressed to effectively delineate forest land fast enough to keep up with settlement. In 1924, it announced a further policy of prioritisation. From that point on, the level of land classification work would in any particular locale be determined by whether many settlers were already in the area, whether flows of settlers were aiming at the area, and finally, in areas seen as potentially agriculturally fertile.<sup>64</sup>

Nevertheless, the tide continued to flow against the Bureau. In 1928, an increasingly besieged Director wrote in the annual report that the Bureau had ‘to stand firm against the settlement of virgin forests’ and noted that it was accused of ‘obstructing the agricultural development of the country’.<sup>65</sup> The onset of the depression years further reduced resources available to the Bureau, slowing land classification activities. The 1931 annual report noted that financial stringency ‘curtailed’ classification despite increased public pressure for agricultural land as well as making it impossible to replace the deceased chief of the Mapping and Drafting Section.<sup>66</sup> In 1922 Placido Dacanay wrote in an article published in the *Makiling Echo* that

58 Ibid., p. 65.

59 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1931* (Manila: Bureau of Printing, 1932), p. 654.

60 Sherfese, *Annual report 1915*, p. 19.

61 Fischer, *Annual report 1916*, p. 11.

62 Fischer, *Annual report 1917*, p. 20.

63 Fischer, *Annual report 1922*, p. 29.

64 Fischer, *Annual report 1924*, p. 81.

65 Fischer, *Annual report 1928*, pp. 91, 114.

66 Fischer, *Annual report 1931*, p. 556.

The greatest difficulty in forest administration in the Islands today lies in the absence of definite information regarding the ownership of land. The establishment that 99 per cent of the public forests belong to the government does not remedy the situation. This may be a fact, but the boundary lines of this vast area are not laid out or located on the ground.<sup>67</sup>

Thirteen years later, in 1935, the situation remained much the same: 65 per cent of the land area of the Philippines remained unclassified.<sup>68</sup>

### *Working plans*

Once a clear demarcation of the forest lands had been achieved, working plans were to be created. These plans would outline a firefighting and silvicultural strategy for the land as well as a cutting strategy based on the forest's estimated yield. To achieve this aim, the Indian Forest Service developed a technique for the creation of working plans that was simple enough for a forest officer to 'prepare in one season a preliminary working plan for a forest area of between 100 and 200 square miles in the plains'.<sup>69</sup>

In the Philippines, the creation of working plans was also a key part of Bureau strategy, but it was even less successful than its efforts at marketing and mapping. Working plans were among the Bureau's earliest published documents: Bulletins 5 and 6 contained plans for concessions on the islands of Negros and Mindoro.<sup>70</sup> It is likely these were seen as marketing tools to entice corporations to invest in the Philippine lumber industry, since afterwards we hear very little of working plans until 1918 when one was prepared for the area around Baguio.<sup>71</sup> Three years later, the Bureau claimed that Baguio was under intensive management,<sup>72</sup> while in 1928, it noted that this was the only working plan in operation.<sup>73</sup> The Great Depression effectively killed off working plan development over the next half decade. Only in 1934 do we hear of further work, in this case, the collection of data for a plan for Mount Arayat in Pampanga; but even this was halted mid-year due to a lack of funds.<sup>74</sup>

The difficulty in producing and implementing these plans is perhaps best illustrated by the experience of the Makiling National Botanic Gardens (MNBG). This was one area that should have very early on been placed under the intensive management of a working plan, given that it was the location of the Forest School and

67 Placido Dacanay, 'A policy for the reforestation projects of the Bureau of Forestry', *Makiling Echo* 1, 3 & 4 (1922): 9–17.

68 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1935* (Manila: Bureau of Printing, 1936), p. 135.

69 Schlich quoted in Barton, *Empire forestry*, p. 81.

70 Everett and Whitford, *A preliminary working plan: Negros Occidental*; Melvin Merritt and H.N. Whitford, *A preliminary working plan for the public forest tract of the Mindoro Lumber & Logging Company: Bongobon, Mindoro*, Bureau of Forestry Bulletin no. 6 (Manila: Bureau of Forestry, 1906).

71 Fischer, *Annual report 1918*, p. 15.

72 Fischer, *Annual report 1921*, p. 27.

73 Fischer, *Annual report 1928*, p. 16.

74 Arthur Fischer, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1934* (Manila: Bureau of Printing, 1935), p. 49.

benefited from its pool of forestry students willing to contribute their time and labour. In 1921 the annual report tells us that the data for the plan had been collected.<sup>75</sup> A year later it noted that maps, stand tables and stock tables for each of the blocks were almost ready.<sup>76</sup> An article in the *Makiling Echo* verifies this claim and goes into great detail as to the method used to create the tables.<sup>77</sup> With these tables and maps, the Bureau found that it was 'possible to regulate to some extent the cutting of timber in the different blocks'.<sup>78</sup> This faint praise was a far cry from the intensive management promised by a functioning working plan, but the Bureau was still hopeful 'that with the addition of growth figures, some simple method of regulating yield in tropical forests may be devised'.<sup>79</sup> The collection of this data was to take years. In 1928 the annual report informs that it was still being collected and in 1930 the Bureau's report announced that it still required 'to put this portion of the reservation under intensive management more accurate data on topography, vegetation cover, and stand'.<sup>80</sup>

The lack of knowledge of Philippine tree species and forests in general appears to have been a major obstacle to the development of workable plans. As early as 1910 Barrington Moore, one of the early American foresters working in the country, argued that a key need of the Bureau was an adequate knowledge of Philippine tree species since 'absolutely nothing [was] known of the silvicultural requirements of the species to be dealt with'.<sup>81</sup> He believed that the best policy would be to 'go slowly until more is known', but acknowledged that the pressure to produce revenue was too great to make this a feasible course of action. Moore's views were proven correct a few years later when Brown and Mathews' study of the Philippines dipterocarp forests reported that the diameter limits currently in use would effectively result in the clear-cutting of the forest because of the need for young dipterocarps to be shielded from the sun.<sup>82</sup> While the Bureau acknowledged the validity of Brown and Mathews' work,<sup>83</sup> they underestimated the difficulty of the problem confronting them. It continued to publish what it referred to as 'silvicultural leaflets' for key Philippine species that purported to represent a solid working knowledge of those species. In 1918, four years after Brown and Mathews' report, for example, we are told that the series was 'intended to furnish a basis for the treatment of the silvicultural requirements of Philippine forest trees'.<sup>84</sup> By 1920, 231 species were covered by this series.<sup>85</sup>

Brown and Mathews' assessment appears to have been better appreciated as the years progressed, however. An article in the *Makiling Echo* in 1927 makes this point

75 Fischer, *Annual report 1921*, p. 31.

76 Fischer, *Annual report 1922*, p. 41.

77 Carlos Sulit, 'A preliminary report on reconnaissance work conducted in the Makiling National Botanic Garden', *Makiling Echo* 1, 3 & 4 (1922): 6–8.

78 Fischer, *Annual report 1924*, p. 32.

79 Ibid.

80 Fischer, *Annual report 1928*, pp. 15–16; Fischer, *Annual report 1930*, p. 457.

81 Barrington Moore, 'Forest problems in the Philippines', *American Forestry* 16, 78 (1910): 75–81.

82 William H. Brown and Donald M. Mathews, *Philippine dipterocarp forests* (Manila, Bureau of Printing, 1914), quoted in Roth, 'Philippine forests and forestry: 1565–1920', p. 47.

83 Roth, *Philippine forests*, p. 48.

84 Fischer, *Annual report 1918*.

85 Fischer, *Annual report 1920*.

clearly with the author at one point writing that ‘the necessary data on growth and yield are not yet available so that European or American forest management strategies will not work until data is collected or the forest thinned into a normal age distribution’. The article went on to repeat Brown and Mathews’ criticism of the current diameter cutting rules, noting that these rules needed revision ‘based on a thorough study of the volume and species distributions of the forests and of the approximate size at which most of the principal species come into full seed bearing and maturity’.<sup>86</sup> The annual report of 1928 echoed in starker terms this sentiment by noting tersely that ‘At present, available growth data are so meagre that it is not practicable to work out any system of regulation in accordance with sound forestry principles’.<sup>87</sup> By 1930, the annual report noted that as logging operations moved further into the interior and into lands that it wished to keep permanently devoted to the production of timber, ‘the question of what logging method to use for any particular area in order that the regenerative capacity of the forest may not be impaired after it is cut over, becomes important [and] points to the necessity of having studies made in logging ... No systematic studies along the above lines have so far been made ... due to lack of properly qualified personnel’.<sup>88</sup> This was a call for action repeated in the 1933 report, which spoke of the ‘urgent need of basic data’ in the face of ‘constant demands’ on forest lands. The report also noted the failure of diameter limits to protect certain species.<sup>89</sup>

Some work was done, however. One of the first of these efforts was a study of the growth of maluruhat (*Syzygium urophyllum*) under ipil-ipil, the idea being to use the ipil-ipil to provide shade for the young maluruhat, a sun-sensitive species.<sup>90</sup> Other studies followed.<sup>91</sup> Steam-powered logging was investigated in 1928<sup>92</sup> and the compilation of a series of growth measurements of key tree species undertaken from 1917 to 1927.<sup>93</sup> Despite these efforts, as we have seen, the development of working plans was at a standstill by the mid-1930s. But it is doubtful that even if the funding was available that the forests could have been placed under even an approximation of sustained management through active working plans due to the Bureau’s still profound lack of knowledge of the Philippine forests.

86 Antonio Racelis, ‘Sustained yield management for Philippine forests’, *Makiling Echo* 6, 2 (1927): 2.

87 Fischer, *Annual report 1928*, p. 15.

88 Fischer, *Annual report 1930*, p. 527.

89 Fischer, *Annual report 1933*, p. 22.

90 Anonymous, ‘Progress report on a study of Maluruhat’, *Makiling Echo* 3, 1 & 2 (1924): 25.

91 Evaristo Tabat, ‘An efficient method of germinating lumbang’, *Makiling Echo* 4, 4 (1925): 19–22; Agapito Cenabre, ‘Root development of bagtikan’, *Makiling Echo* 9, 2 (1930): 14–25; Carlos Sulit, ‘Increased diameter growth of bagtikan’, *Makiling Echo* 9, 4 (1930): 6–15; Antonio Racelis, ‘A study of the distribution of balobo in diameter classes’, *Makiling Echo* 10, 3 (1931): 12–21; Severo Oliveros, ‘Effect of soil inoculation on the growth of Benguet pine’, *Makiling Echo* 11, 4 (1932): 205–14; Justino Seguerra, ‘A study of the clear length of molave’, *Makiling Echo* 13, 2 (1934): 88–113; Justino Seguerra, ‘Observations on the development of buttress roots’, *Makiling Echo* 15, 2 (1936): 134–5; Carlos Sulit, ‘The growth of unit areas in the Makiling National Park’, *Makiling Echo* 15, 3 (1936): 152–65; Justino Seguerra, ‘Composition, distribution and growth of tree species’, *Makiling Echo* 15, 2 (1936): 40–51.

92 Fischer, *Annual report 1928*, p. 10.

93 Fischer, *Annual report 1930*, p. 458.

### *Firefighting*

Forest fires were seen as a major problem for forestry in British India. They were generally blamed on shifting cultivators who set fire to small areas of forest land to plant crops for a year or two before moving to another area. Many times, however, these fires spread beyond the areas to be used by the cultivators, creating problems for the foresters. The creation of fire lines, mentioned previously, was a locally developed technique to deal with this problem.<sup>94</sup>

Fire was also a key concern of the Bureau, but it was more of a regional issue, affecting mostly the pine forests of Luzon. Compared to the other elements of the Empire forestry model, fire fighting appears to have been more successful. A number of strategies were developed to protect the forest from seasonal conflagrations. The earliest of these was the posting of fire wardens to look-out towers as well as to patrol the forests. In 1915, for example, the city of Baguio employed five wardens but still suffered 29 fires.<sup>95</sup> Seven years later the Bureau equipped its Baguio office with a small fleet of motorcycles and a telephone connection to the look-out towers. Whenever a guard stationed in the tower saw a fire he could phone the office to dispatch the firefighting team.<sup>96</sup> The Bureau around this time also came to recommend a controlled burning at the beginning of the dry season to remove much of the flammable material.<sup>97</sup> They also wanted fire lanes to be constructed in reforested areas, but the realisation of this policy took another four years as it involved added expense.<sup>98</sup> By 1931 the annual report could record that the fires were 'not able to make great headway' during the dry season.<sup>99</sup>

### *Logging efficiency and soil protection*

The final element of the Empire model of scientific forestry knowledge was the development of techniques for the better utilisation of logs and protection against soil erosion during the timber extraction process. In terms of utilisation the Indian Forest Service introduced the use of two-person and mechanical saws rather than axes because the trees could thereby be cut closer to the ground. Soil erosion was reduced by selective rather than clear-cutting and the construction of water slides, where possible.<sup>100</sup>

The Americans had been quick to label the logging industry as it existed under Spanish rule as inefficient, noting that the high cost of lumber was a product of the backward means used to obtain it. Much the same techniques, however, seem to have been applied in the early years of their own regime. Describing the operation of a major concession in Negros Occidental one forester wrote of the 'very primitive method of logging' used, declaring it similar 'to that employed by native lumbermen'.<sup>101</sup> The writer went on to note that the primary cutting tool was the axe, but

94 Barton, *Empire forestry*, pp. 86–7.

95 Sherfese, *Annual report 1915*, p. 28.

96 Fischer, *Annual report 1922*, p. 27.

97 Fischer, *Annual report 1923*, pp. 30–31.

98 Fischer, *Annual report 1927*, p. 23.

99 Fischer, *Annual report 1931*, p. 732.

100 Barton, *Empire forestry*, p. 90.

101 Merrit and Whitford, *A preliminary working plan*, p. 40.

that more efficient saws were sometimes used. Once cut, ‘rude sleds’ were dragged by *carabaos* (water buffaloes) back to the mill.<sup>102</sup> Interestingly enough, after the advent of mechanical logging, there appears to have been a rethink about the wastefulness of the traditional approach. Steam-powered logging was seen as requiring ‘some form of artificial regeneration’ of the cutover area<sup>103</sup> and could be ‘destructive and disastrous to the forest from a silvicultural standpoint’.<sup>104</sup> On the other hand, ‘animal logging ... does not show any perceptible damage and causes little drain on the forest, nor does it deprive the licensee of much merchantable timber ...’.<sup>105</sup>

It was also noted that native woodsmen needed to be carefully watched lest they cut too high, leaving unnecessarily high stumps.<sup>106</sup> In the same report he noted that the largest trees remained standing simply because the saws in the mills could not handle them.<sup>107</sup> For the Bureau all of these practices were intolerably wasteful. In 1915, the Bureau succeeded in getting passed a bill that would give more incentive for mills to waste less timber in their operations. Previously, forest charges were determined based on sawn timber, rather than the logs themselves. The bill changed this practice, imposing a charge on waste wood as well as the final product.<sup>108</sup> This apparently had some effect, as it was noted a few years later that at least some of the large mills had installed equipment to make use of timber that would have formerly gone to waste.<sup>109</sup> There was also at this time an attempt to get the licensees to switch from axes to saws to more efficiently cut trees and also to reduce the ‘excessive’ snipping of the cut log ends, a technique used to make the logs easier to transport.<sup>110</sup> Other than these early efforts, however, we do not see much evidence that the Bureau of Forestry was overly concerned with a more efficient utilisation of the forests by the loggers.

### A lack of local knowledge

The record of the Bureau of Forestry up to the start of the Pacific War was not a spectacular success. Although it attempted to implement a vision of the Empire forestry model it ultimately failed to do so. While new markets for forest products were created,<sup>111</sup> there was insufficient forest mapping, settlement of rival land use claims, and development of working plans, and its firefighting efforts were limited to a small area around Baguio. A great deal of the fault for this state of affairs lies in the lack of sufficient recognition by the Bureau of Forestry that forestry had to be adapted to local conditions, especially local economic and political realities. The Bureau’s foresters were not able to understand or master the nature of the political and economic system they were embedded in. This was a system that was very different from the

102 *Ibid.*, p. 40.

103 Fischer, *Annual report 1920*, p. 23.

104 Fischer, *Annual report 1929*, p. 113.

105 Fischer, *Annual report 1927*, p. 126.

106 Everett and Whitford, *A preliminary working plan: Negros Occidental*, p. 669.

107 *Ibid.*, p. 668.

108 Sherfese, *Annual report 1915*, p. 11.

109 Fischer, *Annual report 1917*, p. 44.

110 *Ibid.*, p. 44.

111 Tucker, *Insatiable appetite*, p. 381.

other European colonies in the region, due to the terms of the Philippine's incorporation into the American empire.

The United States became involved with the Philippines through the prosecution of the Spanish–American War in 1898. This coincided with an armed insurrection in the Philippines, which the Americans encouraged, aiming to replace the Spanish rulers afterwards. It was initially believed that the Filipino revolutionaries would quickly fall into line. This was not to be, and years of bloody war ensued. It was in this context that a carrot-and-stick strategy was devised by the invading Americans. The wealthy elite were to be won over by augmenting their already considerable economic power with political power,<sup>112</sup> while the poorer classes faced punitive measures designed to break their spirit to continue the resistance.<sup>113</sup> The policy for the most part was successful in putting an end to the armed hostilities, but it had unintended consequences for the reforms the United States had in mind for its new colony, simply because they had to accept Filipino representatives as serious partners in governance. And from their own perspective, these same representatives, having fought against first the Spanish and then the Americans were unlikely to accept a subordinate role for themselves for very long.<sup>114</sup> As Frank Jenista noted of the period, the Filipinos continued ‘the abortive revolution through evolution’.<sup>115</sup> Initially governed by the Philippine Commission, a body that included a minority of carefully chosen local notables, political power was gradually extended. In 1907 an elected Philippine Assembly was created. It swiftly moved to assert itself against the American-dominated Philippine Commission that in a new role, acted as an upper house.<sup>116</sup> In 1916 Filipinos were given the right to elect a Senate while the Commission was abolished. At the same time there was also a reduction in the powers of the US-appointed Governor-General.<sup>117</sup> And finally, in 1935, with the creation of the Philippine Commonwealth and the election of Manuel Quezon as President, control over all but foreign affairs and defence was ceded to Filipinos.

Accompanying these political steps was a parallel development in the state bureaucracy, that was, if anything, even faster — by 1919 only 6 per cent of the civil service was American, down from 29 per cent at the start of the US period,<sup>118</sup> while 90

112 Benedict Anderson identifies this elite as a class of Chinese mestizos ‘who bloomed economically under the Spanish colonial period and consolidated their wealth with political power under the Americans’; Benedict Anderson, ‘Cacique democracy in the Philippines: Origins and dreams’, *New Left Review* 169, 3 (1988): 4.

113 Michael Cullinane, ‘Implementing the new order: The structure and supervision of local government during the Taft era’, in *Compadre colonialism: Studies on the Philippines under American rule*, ed. Norman Owen (Ann Arbor: University of Michigan Press, 1971), p. 13; Paul Hutchcroft, ‘Colonial masters, national politicians, and provincial lords: Central authority and local autonomy in the American Philippines’, *Journal of Asian Studies* 59, 2 (2000): 284.

114 Glenn Anthony May, *Social engineering in the Philippines: The aims, execution, and impact of American rule* (Westport, CT: Greenwood, 1980), pp. 55–6.

115 Frank Jenista, ‘Conflict in the Philippine legislature: The Commission and the Assembly from 1907 to 1913’, in Owen, *Compadre colonialism*, p. 81.

116 *Ibid.*, p. 83.

117 Patricio Abinales and Donna Amoroso, *State and society in the Philippines* (Lanham, MD: Rowman and Littlefield, 2005), p. 140.

118 *Ibid.*, p. 140.

per cent of all provincial officers and close to all of the municipal officers were Filipino.<sup>119</sup>

By itself the need to be aware of the very real extent of Filipino political power would not have been problematic for the Bureau of Forestry except for how that power was entwined with the economic base of the colony. Networks of patronage developed that linked the local to the national and which combined economic and political interests.<sup>120</sup>

During the nineteenth century the Philippines had been increasingly woven into a global economic order as a producer of tropical agricultural products. Four of these crops dominated the country's export trade: sugar, abaca, coconuts and tobacco. Together they made land a key economic resource and its acquisition a foremost priority on the part of the Filipino elite, a priority that certainly did not cease during the American period. Instead, wealthy agriculturalists turned to the newly empowered Filipino politicians to secure and extend land rights<sup>121</sup> using the state apparatus 'as an instrument of primitive accumulation'.<sup>122</sup>

It was a lack of a clear understanding of this political economy that undid the best efforts of the Bureau to create a colonial American Empire forestry model in the Philippines. For Filipinos land was key to wealth accumulation — and what was most feasible to cultivate on this land were traditional agricultural crops. The expertise and capital required to engage in intensive forms of forestry was just not available to the majority of even wealthy Filipino agriculturalists. Attempts to interest them in this new kind of 'crop' were unlikely to achieve many converts.<sup>123</sup> The alternative, to encourage those who had both capital and expertise, that is, foreign forestry firms, was also not likely to win elite Filipino approval, for although confident of their political power, economically they feared an invasion of American capital and what that might mean to their own economic position.<sup>124</sup> The Bureau of Forestry, oblivious to the political-economic reality it faced, constantly stressed the need for the forest industry of the colony to develop intensively using what it believed to be sustainable methods of timber extraction. It also explicitly favoured the capitalisation of the industry. The annual reports bemoan the lack of capital at work in the forests,<sup>125</sup> while its promotional literature stressed the benefits that would be granted to large corporations willing to invest in the industry.<sup>126</sup> Such a position was unlikely to win the Bureau friends among the Filipino elite.

119 Cullinane, *Implementing the new order*, p. 17.

120 Hutchcroft, 'Colonial masters': 286–7; Jenista, *Conflict in the Philippine legislature*, p. 89.

121 W.G. Wolters, 'Rise and fall of provincial elites in the Philippines: Nueva Ecija from the 1880s to the present day', *Sojourn: Journal of Social Issues* 4, 1 (1989): 54–74.

122 Abinales and Amoroso, *State and society*, p. 141.

123 Towards the end of the 1920s, Quezon tried to establish a Filipino capitalised timber company, the Pacific Lumber & Development Company, but was forced to turn to a mix of Japanese and Filipino capital instead. Letter from UP Dean of College of Liberal Arts to Manuel Quezon, 31 July 1929, Quezon Papers.

124 Filomeno Aguilar, *Clash of spirits: The history of power and sugar planter hegemony on a Visayan Island* (Quezon City: Ateneo de Manila Press, 1998), p. 198; May, *Social engineering*, pp. 168, 174.

125 Fischer, *Annual report 1917*, p. 42; Fischer, *Annual report 1923*, p. 9; Fischer, *Annual report 1930*, p. 506.

126 Ahern, *Opportunities for lumbering*, pp. 186–7; George Ahern, *A few pertinent facts concerning the Philippine forests and needs of the forest service that should interest every Filipino* (Manila: Bureau of

Given that the economic elite was politically empowered from very early in the American era, it was able to use the political process to signal its displeasure with the Bureau. Mention has already been made of the general underfunding of the Bureau, but perhaps even more telling was its handling of one particular funding request. In 1920, the Director, desperate to stop the haemorrhaging of trained foresters from the Bureau, appealed to the American Governor-General 'to revise the civil service standing of rangers'.<sup>127</sup> Such a revision would have allowed these rangers to automatically receive higher entrance and maximum salaries. The Governor-General acceded to the request, but the story, from the point of view of the Bureau, had an unhappy ending as the Philippine legislature refused to sanction the necessary appropriations and hence the rangers did not receive the promised increases to their pay.<sup>128</sup> Subsequent years saw a similar refusal<sup>129</sup> while in the annual report for 1926 the Director could write of the issue that the employees of the Bureau believed 'they have not been treated fairly in matters of salary increases' and 'although this conception has not yet developed a destructive effect on the morale of the force ... if it is allowed to seethe and simmer in the minds of the personnel it might cause such a reaction as would be to the detriment of the forest service'.<sup>130</sup> Despite his outspoken plea, the legislature continued to deny increases in appropriations for salary.<sup>131</sup> Clearly, the Bureau was not seen by the politicians of the legislature to be an important part of government despite the fact that it generated revenue for the state.<sup>132</sup>

But as well as thwarting efforts to increase the remuneration of Bureau officials, elements of the legislature consistently tried to either abolish the Bureau of Forestry or merge it with other bureaus or departments. The annual report for 1915 recounts that 'efforts to this effect have been made almost every year during the last five years'.<sup>133</sup> A further attempt was made in 1932.<sup>134</sup> While these attempts to eliminate the Bureau inevitably failed they nevertheless took a toll, producing 'a very bad effect on the personnel ... as ... forestry officers cannot be expected to take such interest in their work as they should if they always fear that the Bureau would be abolished and that they might find themselves without a position'.<sup>135</sup> For their own part, it is likely that the sponsors of these bills hoped to tip the balance in the classification process in favour of determining land to be suitable for agriculture. In its response to the 1932 merger attempt, the Acting Director noted this point indirectly, writing that 'the jurisdiction of the two bureaus are diametrically opposed to each other ... public agricultural lands for disposal and public forests for conservation by wise use'.<sup>136</sup>

Forestry, 1908), p. 8; Anonymous, *Useful information concerning public forests and possibilities for their exploitation* (Manila: Bureau of Forestry, 1908), p. 3.

127 Fischer, *Annual report 1920*, p. 8.

128 Fischer, *Annual report 1921*, p. 7.

129 Fischer, *Annual report 1923*, p. 8; Fischer, *Annual report 1924*, p. 7.

130 Fischer, *Annual report 1926*, p. 8.

131 Fischer, *Annual report 1927*, p. 8; Fischer, *Annual report 1928*, p. 7.

132 Nano, 'Brief history of forestry in the Philippines': 9–128.

133 Sherfeseesee, *Annual report 1915*, p. 15.

134 Florencio Tamesis, *Annual report of the Director of Forestry of the Philippine Islands for the fiscal year ended December 31, 1932* (Manila: Bureau of Printing, 1933), p. 427.

135 Sherfeseesee, *Annual report 1915*, pp. 15–16.

136 Tamesis, *Annual report 1932*, p. 427.

The Filipino elite demonstrated their dislike of the Bureau in a third way; namely, their reaction to the Bureau's attempt to control shifting cultivation, or *kaingin* in forest lands. Here elite opposition merged with the resentment of those at the opposite end of the socioeconomic scale, for if elite Filipinos looked askance at the Bureau, so did those at the bottom of the socioeconomic scale. The Philippines' integration into the world economy in the late nineteenth and early twentieth centuries produced not only growing tropical crop exports, but also greater immiseration among many Filipinos as a wealthy elite tightened its grip on land and labour.<sup>137</sup> For centuries the forests and mountains of the Philippines had given shelter to those fleeing the dominant order.<sup>138</sup> They served a similar function now as the dispossessed moved into forested areas to find land to plant subsistence crops in an agricultural system called *kaingin*. *Kaingin* was the bane of the Bureau of Forestry,<sup>139</sup> blamed for vast swathes of forest destruction and invariably described as an 'evil'. From the perspective of the Bureau this was, perhaps, the case. Nevertheless, a better local knowledge would have made them realise that it was, to continue the metaphor, more akin to 'original sin', a condition that was part and parcel of the political economy of the Philippines.

To begin with, *kaingin*-making was part of what amounted to a primitive accumulation strategy for the Filipino elite. Marshall McLennan, for example, describes a process of land development in Central Luzon where forests would be cleared by the landless ostensibly for their own use, but later, after the hard work of clearance was finished, claimed by local elites.<sup>140</sup> The Bureau's publications record evidence of this process. The annual report of 1917 noted that a category of *kaingin*-makers worked with 'the support of influential persons in town who share in the crop and eventually claim the land', while an article in the *Makiling Echo* made much the same assertion: 'Men of influence often have land cleared by ignorant natives in order to plant permanent crops and later secure title to the land'.<sup>141</sup>

Much of the impetus to *kaingin*-making was, in fact, the expansion of capitalist agriculture and it was not likely to stop, given a regime that was wholly supportive of such efforts. To give just one example, the Bureau itself specifically noted a number of incidences where abaca growers in Bicol initially cleared a *kaingin* in the forest and then gradually extended the land under cultivation by girdling the large trees adjacent to this area, a process that was apparently hard to detect without close inspection.<sup>142</sup>

137 John Larkin, 'Philippine history reconsidered: A socio-economic perspective', *American Historical Review* 87, 3 (1982): 617.

138 Reynaldo Ileto, 'Outlines of a non-linear emplotment of Philippine history', in *Reflections on development in Southeast Asia*, ed. Lim Teck Ghee (Singapore: Institute of Southeast Asian Studies, 1988).

139 Such systems of shifting cultivation were not confined to the Philippines, but extensive over much of Southeast Asia and seen by foresters throughout the region as a major impediment to their forest management strategies; Potter, 'Forests versus agriculture', p. 32.

140 Marshall McLennan, 'Land and tenancy on the central Luzon plain', *Philippine Studies* 17, 4 (1969): 651–82.

141 Fischer, *Annual report 1917*, p. 16; O.W. Pflueger, 'The "kaingin" problem in the Philippines and a possible method of control', *Makiling Echo* 8, 1 (1929): 15.

142 Fischer, *Annual report 1917*, p. 20; Fischer, *Annual report 1918*, p. 14; Fischer, *Annual report 1924*, p. 21. Girdling refers to the cutting of a strip of bark around the entire circumference of the tree, thereby killing it over a period of time.

As mentioned, abaca was one of the colonial economy's major export crops and its growth seen by the administration as a sign of progress.

Given the uses to which *kaingin*-making could be put it is not surprising that there were fewer *kaingin* cases brought to the attention of the local authorities than there should have been. Barrington Moore wrote that the Bureau 'has not only not been supported by the government in its attempts to enforce the law, but has actually been prevented from doing so'.<sup>143</sup> In 1918 it was claimed that politicians were encouraging *kaingin*-making in virgin forests adjacent to existing farms and using the good offices of the local municipal treasurer to assess and collect taxes on the land as a means to prove ownership while a year later the Bureau reported that a local politician took it upon himself to issue permits to *kaingin* makers as means to curry favour in an upcoming election.<sup>144</sup> The 1922 report notes that provision of the law making mandatory fines and imprisonment for illegal *kaingins* 'had not been formerly observed by all JPs [Justices of the Peace]'. They had instead 'imposed nominal fines and a few days imprisonment, if any'.<sup>145</sup> And in 1928 the Bureau of Lands had to be instructed by the Undersecretary of Agriculture and Natural Resources not to grant *kaingin* permits,<sup>146</sup> but three years later it was found to have authorised *kaingins* throughout the entire proposed Tayabas Isthmus forest reserve.<sup>147</sup>

The annual report for 1927 gives an especially detailed account of a case received from the Bureau's office on the island of Masbate. The incident in question involved Romualdo Momo and Vicente Dignos, who had been sentenced to serve prison time as well as fined for illegal *kaingin*-making. The sentence was never carried out and no record of appeal could be found to justify its suspension. The report hoped that the account would give 'an idea of the problems confronted by the Bureau of Forestry through lack of cooperation on the part of the other Government officials', suggesting that the issue was not limited to a few isolated cases.<sup>148</sup>

Despite highlighting the problems, the 1927 annual report did not see their end. They continued into the 1930s with the 1934 report perhaps unduly hopeful that a Circular 18 issued by the Secretary of Justice to its local officials would help, noting again that JPs 'have been imposing very light penalties upon violation of the forest laws, particularly pertaining to *kaingin*'.<sup>149</sup>

The useful role of *kaingin*-making, at least from the perspective of agricultural elites, made local government less than enthusiastic about enforcing *kaingin* laws. As we have seen there are numerous incidences recorded in the Bureau's annual reports. What was missing was the official awareness of these larger patterns the incidences represented. At the same time, *kaingin*-making was a legitimate vehicle for the landless or dispossessed to acquire subsistence. As noted above, for centuries the mountains and frontier areas of the Philippines provided just such an escape valve; they continued to do so during the time of the American Bureau of Forestry. In

143 Moore, *Forest problems*, p. 80.

144 Fischer, *Annual report 1918*, p. 17; Fischer, *Annual report 1919*, p. 33.

145 Fischer, *Annual report 1922*, p. 19.

146 Fischer, *Annual report 1928*, p. 39.

147 Fischer, *Annual report 1931*, p. 654.

148 Fischer, *Annual report, 1927*, p. 29.

149 Fischer, *Annual report, 1934*, p. 100.

the correspondence of Manuel Quezon we find the following missive from a group of farmers contesting a decision of the Bureau of Forestry on the island of Negros. The letter sheds light on the views of this normally silent group:

The Director in Charge Forest station reported that the tract of land applied for is not suited for agriculture and at the same time it contains commercial timber. We believe that the report of the said officer is partly erroneous because the tract of land at present has a sign of cultivation and the plant (corn) growing thereon will convince everybody that the land is best suited for agriculture.<sup>150</sup>

These petitioners' view of the forest was radically different from that of the Bureau. They wanted land to plant a familiar food crop (corn) and were willing to assign any timber on that land to the nearest sawmill: 'we are willing to give the timbers to the Arnaiz Sawmill for the sake of economy'.<sup>151</sup> It did not interest them in the slightest. They understood that the Bureau made its decision about the land's fate based on its assessment of whether it was more suitable for agriculture or forestry. But for the farmers, the only important criterion was whether a crop like corn could be grown on the land.

In another letter, this time from the frontier lands of Mindanao, we find some of the residents asking Quezon to approve the municipal council's decision to open the communal forest, established by the Bureau as part of its reforestation efforts, to agriculture 'as it is fitted for the purpose'. The letter goes on to recognise the interest of the Bureau in commercial timber, but claims that the area has only small trees and that it had previously been cultivated by the Subano people. The letter ends by noting that the undersigned are 'poor. We want houses ... There is still room for Forestry purposes mountainward'.<sup>152</sup>

In this letter here again we see a different perspective on the activities of the Bureau. For these correspondents the notion of the forest as a crop was ludicrous and unnecessary as there was plenty of it elsewhere. What was scarce and in fact more important was agricultural land: 'We want to develop our natural resources so that in the near future Mindanao may be equal to the rest of the Philippines. That is why Mindanao is entirely behind from its resources because [*sic*] of the Reserved Forest near the Coast'. For the petitioners the key and measure of economic progress was the development of agriculture, not forestry.

This was not the Bureau of Forestry's position and hence a source of conflict between the two groups. *Kaingin*-making and other forms of unauthorised use of what the Bureau claimed as forest land was an 'evil' that needed to be combatted either by punishment meted out by the law or education through information and formal talks given by rangers as part of their duties. But unlike other colonies, in the Philippines, forestry officials could not necessarily rely on the rest of the state apparatus to get its way. There was a reason for writing these letters to Quezon — he was a powerful political figure and in a position 'to do something' for them.

150 Letter from Juan Canaveral et al. to Senate President Quezon, 24 June 1935, Quezon Papers.

151 Ibid.

152 Letter from Severino Capapas to Senator Quezon, 24 Sept. 1927, Quezon Papers.

Together with the Bureau's lack of a realistic assessment of the elite's perception and views of forest use, this ignorance of the political and economic realities of the mass of the farming population of the country doomed its efforts to failure.

### **Conclusion**

Overall, from the perspective of the Filipino ruling class the Bureau of Forestry was a hindrance to their economic aspirations rather than an ally. Not only did it advocate a 'crop' that likely would prove difficult to profit from, it also, to an extent difficult to ascertain, was less amenable to participation in the patronage networks that linked state with society. The Bureau's solution to the problem of under-capitalisation, namely, foreign investment, was equally problematic to members of an elite who felt themselves the natural owners of the country's wealth, but also at a disadvantage when it came to foreign competition. And again, the lack of understanding of the dominant economic dynamic in the country meant that the human 'fallout', that is, the marginal population seeking a living beyond the control of agricultural elites in the mountain forests, were viewed as an aberration or residues of traditional mind-sets that could be punished or educated into changing their ways, rather than an unstoppable wave of migration that often became a tool for the further expansion of elite landholdings.

These concerns would not have been so much of a problem for the Bureau but for the need of the colonial state from the very beginning of its rule to give real power to local politicians. This was the nail in the coffin of the Bureau's relevance for it meant that its views and policies on forestry could not be imposed by fiat on a subjugated population. The fact that the Bureau itself did not sufficiently recognise its position within the overall Philippine political economy doomed its efforts to create a colonial American Empire forestry variant. Its policies were not taken seriously; it was starved of funds and personnel; and frequently, it faced the threat of abolition.

In this context, the very real need of the Bureau was to develop an alliance with the local population in order to persuade them of the value of its work. A viable Philippine model of forestry would have had to be forged on this basis. But, contenting itself to educational displays at schools and carnivals, the Bureau does not appear to have been able to understand the need for such a project, let alone capable of implementing it successfully.