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Land Rights and the Environment in the Indonesian Archipelago, 800-1950

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Abstract

This article has two basic aims. First, I discuss several notions regarding long-term changes in land-tenure arrangements, mainly in what is now Indonesia. I argue that the character of these changes is often badly understood, partly because the older literature has been misrepresented, partly because the older literature was wrong, and partly because many scholars implicitly or explicitly appear to believe in "stages theories" (best known among scholars under the German term *Stufentheorie*), which posit fairly uniform and unidirectional stages of land-tenure development across the board. Second, this article deals with environmental causes and effects of long-term land-tenure developments in the Indonesian Archipelago.

Land tenure and conservation are hotly debated at present, but the historical substance in such debates is meagre, usually going back no further than the 1950s or 60s. Nor does there seem to be much interest in the environmental roots of land-tenure arrangements, perhaps because the participants in the land-tenure-and-the-environment debate are mainly anthropologists and environmentalists, who might find such topics of antiquarian importance only. As an historian I cannot share this view.

Résumé

Cet article a deux objectifs essentiels. Il se penche tout d'abord sur quelques idées relatives à l'évolution des régimes fonciers sur le long terme, principalement dans l'Indonésie actuelle. La nature de cette évolution a souvent été mal comprise : la littérature scientifique de la période coloniale a été déformée – quand elle n'était pas dans l'erreur –, et par ailleurs nombre de chercheurs adhèrent de manière implicite ou explicite à la *Stufentheorie*, qui postule l'évolution uniforme et unidirectionnelle des régimes fonciers. L'article examine dans un second temps les causes et les conséquences environnementales du développement de la propriété foncière de longue durée dans l'archipel indonésien.

La propriété et la protection des terres font aujourd'hui l'objet de débats houleux, mais la matière historique citée à l'appui de ces débats est maigre et remonte rarement à la période antérieure aux années 1950 ou 1960. Les racines environnementales des régimes fonciers

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ne semblent pas non plus avoir suscité l'intérêt qu'elles méritent, peut-être car les participants au débat « propriété foncière et environnement » sont surtout des anthropologues et des écologistes considérant ces questions comme désuètes—vision que l'historien ne peut partager.

Keywords
Indonesia, pre-modern period, early-modern period, land rights, environment

Individual Private Tenure?

Modern writers on land tenure (land rights) in Indonesia generally appear to believe that colonial rule changed, or at least attempted to change, the customary or communal land-tenure arrangements that were supposedly prevalent in the pre-colonial period into individual private tenure (see introduction, this volume). Although this may be true for some regions, it certainly does not apply to the entire Indonesian Archipelago.

Individual hereditary private ownership of land was found in some areas of the Archipelago before 1800. Here, we have to be careful with the term "pre-colonial." Some people might argue that the colonial period in Indonesia did not start until the early nineteenth century, when part of the Archipelago formally became a colony of the Dutch State. For our purpose, though, this seems too formalistic, and in this article I regard the areas where the Dutch East India Company (VOC) held sway as "colonial" territories as well.

This applies, for instance, to the city of Batavia (present-day Jakarta) and its environs, in West Java. This area had been conquered by the VOC in 1619 and was therefore regarded, in the parlance of the day, as full allodial property of the Company.[1] The VOC soon began literally to give away land to servants of the Company who asked for it, land that became individually and privately owned. Not much later, when the VOC was living in peace with its indigenous neighbours Banten, Cirebon, and Mataram (c. 1660), land became increasingly valuable, and the Company started to ask money for it. Other pieces of land near the city were given out in apanage or fief (in quasi-feudal tenure) to the (hereditary) commanders of indigenous auxiliary troops. Most land, however, became hereditary individual private property.

[1)] The term "allodial" was used in contrast to feudal; with allodial property there is no higher, residual claimant, while with feudal property there is always a higher institution (usually a sovereign ruler) who can, theoretically, claim higher rights.

Nevertheless, much of this was not what we would call today private landownership. Though originally small "urban" plots had been given out, at a later time large parcels of land further removed from the city were sold, usually to Europeans and Chinese. These were large properties, for which the term "private estates" (*particuliere landerijen*) has been coined. They were tropical copies of the estates bought by rich merchants in the Netherlands, where they could relax far away from the hustle and bustle of the cities and the affairs of trade and state.[2]

The private estates around Batavia had a resident indigenous population, apart from the owner, his family, and his slaves. Although much of this land was under forest cover when it was sold by the VOC, and the indigenous population may thus have post-dated the sale, during the eighteenth and nineteenth centuries such estates were bought and sold complete with their resident population. These people were often the real tillers of the soil (apart from the slaves and some wage laborers), and their rights to land should probably be regarded as customary tenancy: they were probably not supposed to be evicted, but it is unlikely that their land could be officially sold. It is possible, though, that it was sold unofficially.[3]

Although some of the arrangements of the colonial powers might, therefore, have looked like private individual ownership as we know it, they turn out on closer inspection to be something different.

Communalization Stimulated by the Colonial Power

The next point is a related one, and the examples are again taken from the situation in Java, this time after 1800.[4] I argue that the Dutch colonial state during the nineteenth century actively discouraged private individual land tenure in some areas in Java. Most of this took place in Central Java and, to a lesser degree, East Java.

During much of the nineteenth century, the Dutch designed two "systems" in Java in order to increase the production by smallholders of com-

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2) For more detailed information on VOC land policies in and around Batavia, see Riesz 1883-90, vol. 1; De Haan 1922-3, particularly 1: 130, 419.

3) Around 1800 their *sawah*s (bunded [banked] and irrigated fields, usually planted with rice) were mentioned as collateral for loans from Chinese moneylenders (Boomgaard 1986: 33), which implies that they could be forfeited and sold, although such sales would almost certainly not be registered officially.

4) Data for this section were taken from Boomgaard 1989.

modities for the international market, particularly coffee, sugar, tobacco, and indigo. The first is the infamous Cultivation System (*Cultuur Stelsel*), the other that of large-scale leasehold of apanages in the so-called Principalities (*Vorstenlanden*).

Many people will have heard of the Cultivation System (1830-1870), although some of its finer points may have been misunderstood by recent writers. The point to be made here is that in villages that were ordered to grow sugar or indigo, individual private tenure of land often—perhaps even almost always—changed into communal tenure. "Communal tenure" here means that instead of fixed, permanent holdings, cultivators received shares in the arable lands that were frequently redistributed.

Two concurrent reasons are given for this phenomenon. In the first place, it was a means to equalise the burdens of compulsory cultivation; equal shares meant equal duties. Fields were redistributed regularly—but not necessarily annually—when young families or recent migrants had to be accommodated, contingent upon their willingness to share the labor burdens. Secondly, it facilitated crop rotation—the arable lands were divided into sections, half of which would be under rice and the other half under sugar or indigo. Every cultivator would have one or more pieces of land under rice, while half or a third of the arable would be planted with sugar for the factory. After about a year, the lands on which sugar had been cultivated would revert to the peasantry and be planted with rice. In this case there was no need for equal holdings, just for regular rotation.[5]

Data on the situation before 1830 strongly suggest that land tenure in many, if not most, areas of Central and East Java was individual private ownership, although there are also indications of communal tenure, but probably not as a dominant arrangement. The most likely explanation for the occurrence of some communal tenure is that in many—lowland or upland valley—wet-rice-producing villages, arable lands had been claimed by the village when their owners died without issue or had left the village forever. Villages appear to have had so-called residual rights to all village lands, and the village head could give temporary use rights to such

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[5] Cleary and Eaton (1996: 39) assume that the Cultivation System "led to major changes in the structure of large landholdings." There are no indications that there were large landholdings before 1830 (apart from the above-mentioned private estates, where the Cultivation System never applied); of course, some cultivators had more land than others, but I would not call those "large landholdings." This situation did not change fundamentally after 1830.

communal holdings to recent immigrants or cultivators in search of temporary expansion of their arable.[6]

It is also likely that some equalization and redistribution of holdings took place along the northern coast of Central Java, where the VOC had held sway since 1743. It is generally assumed that the Company increased the burden of statute labor (corvée labor) in this region and that, in some instances, villages reacted by communalizing tenure arrangements, as would be done later under the Cultivation System too.

Private, hereditary, individual land tenure appears to have been at least as important as communal tenure, however, and the introduction of the Cultivation System after 1830 led to the widespread introduction or expansion of communal tenure; in other words, a move away from individual private tenure brought about by colonial policies.

What happened in Java's Vorstenlanden—i.e., the area that was still being ruled by indigenous princes—after 1830, does resemble the changes just described in the areas under more direct colonial rule. During the eighteenth century, some apanage holders had leased their holdings to rich Chinese entrepreneurs, and around 1790 the first European leaseholder (*landhuurder*) appeared. However, the system did not really take off until after the Java War (1825-1830). European entrepreneurs who wanted to produce sugar, indigo, or tobacco, leased an apanage, could then lay claim to one third or half of the *sawah*s, and started to plant their crops on their share of the arable. Labor was provided by the inhabitants of the apanage, and, for the reasons given above, landholdings were regularly redistributed and sometimes equalized. Thus here too, communal land tenure increased, and individual tenure disappeared or became less important.

Early Java in the Inscriptions

Individual hereditary private tenure of land was, as we have just seen, widespread in many parts of Java before 1830, and perhaps even more so before 1743,[7] but individual, hereditary private tenure was certainly much

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6) The term used by the famous Dutch scholar of *adat* (customary law) Cornelis van Vollenhoven for such residual rights was *beschikkingsrecht* (Van Vollenhoven 1919: 8). This has been translated variously as "rights of avail" and "rights of disposal," but the term "residual rights" seems to have prevailed (e.g., Appell 1997: 83).

7) West Java does not appear to have known any communal tenure in the eighteenth and nineteenth centuries, and in East Java it appears to have been absent in the less densely settled areas.

older than that. Although data on land tenure in Java outside the area ruled by the VOC for the period between 1600 and 1750 are rare if not absent, we do have much earlier data, based on epigraphic evidence (inscriptions), for Java and the adjacent island of Bali.

In epigraphic texts dating from ninth- and tenth-century Java, villages or communities (*wanua*) are mentioned, "representing both an internally-organized group of people and a specific stretch of territory," whose rights to land derived from deified ancestors. The village—not the state or the king—"appears to have held undisputed claim to authority over all the territory within those boundaries, whether or not it was cultivated. Texts commonly mentioned valleys, hills, sawah fields, orchards, forests, *tegal* ("dry," i.e., unirrigated) fields and rivers as belonging to the wanua.[8]

Regarding roughly the same period, Christie states:

> Different types of productive land within the boundaries of early Javanese and Balinese community territories fell into different classes of tenure. Irrigated rice fields, orchards and houseland were owned and inherited by individuals and families. In Java, other types of land in the community's territory were apparently owned by the community as a corporation; in Bali, inheritance regulations suggest that in some cases even grassland and dry rice fields may have been owned by individuals. Communally held land came under the direct or indirect authority of the community council, and was subject to regulation by community officials. This land included salary fields attached to community offices; swidden land, presumably used by households in rotation; and forest, fallowed swidden land, grassland, marshes and bodies of water that were apparently open to communal grazing, fishing, hunting and collecting, under the oversight of specified community officials. (Christie 2004: 51)

Therefore, in Java and Bali, by the tenth century, land could be bought and sold on a freehold basis, pawned, and leased. Irrigated rice land in particular appears to have been held at this early date in individual hereditary private tenure (Christie 1994: 31-2; Christie 2004: 55).

Perhaps one caveat should be added here: much of our epigraphic information derives from tax-exemption grants to religious institutions, and one wonders whether the sale of land might have been permitted only (or mainly) when this took place in connection with such a grant to a temple or monastery.

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[8] Cf. Christie 1994; the quotes are on pages 28 and 29 respectively.

"Indigenous" Tenure and the Adat Law School

It seems questionable whether, in the eighteenth and nineteenth centuries, the colonial state had ever been in favor of untrammelled hereditary individual land rights for indigenous people, apart from the situation in urban centers. Limiting the discussion to rural areas, a distinction should be made between the periods before and after c. 1900.

Before 1900, the colonial state regarded itself as the owner of all lands for which there was no proof of alternative claims. This point of view was codified in the Agrarian Law of 1870, but it had inspired regulations regarding, for instance, the titles to forested land in Java since about 1800, if not earlier. Lands actually occupied and cultivated by local communities were, however, recognized as "indigenous tenure." The law recognized all kinds of customary arrangements, but it also allowed individual private land tenure, albeit with the restriction that land alienation was subject to residual village rights. The sale of land under indigenous individual tenure to non-indigenous people (Europeans, Chinese) was forbidden.[9]

In fact it seems that the colonial rulers were of two minds about indigenous individual private tenure. On the one hand there was the liberal notion, shared by some colonial functionaries, that only a property-owning peasantry would work hard and invest in order to improve its property, and, on the other hand many colonial bureaucrats were, in true Orientalist fashion, deeply convinced that the Javanese were strongly community oriented and that it might be dangerous to tamper with their communal arrangements, which were perceived as guaranteeing *rust en orde* (peace and order). Moreover, the "native" who could freely sell his land to a foreigner would be too easily swindled out of it by the wily Chinese or the land-hungry European. In this "dualist" view (private tenure for Europeans, communal tenure for Indonesians), the natives should remain native.[10] Such views were not confined to the colonial officials stationed in Java. Around 1900 it was deplored that the Minangkabau of Central Sumatra, whose tenure arrangements of irrigated rice fields were characterised by joint ownership ("communal property") in the hands of the matri-

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[9] It is thus incorrect to claim, as Tsing (2002, 104) does, that "native" lands could not be sold at all.

[10] On "native" landed property in Malaysia c. 1900 that could not be alienated to foreigners, see Kratoska 1983.

clan (lineage, sublineage), in practice frequently sold pieces of ancestral land, which ran counter to customary law.[11]

After 1900, the Adat Law School of Van Vollenhoven began to influence colonial theory and practice. Scholars and officials suddenly began to find "residual rights" of the village or the lineage, and they were told by Van Vollenhoven in so many words that land tenure would develop by itself in the direction of more individual tenure and that they would only confuse the issue by tampering with land-tenure arrangements in order to speed up the process (Van Vollenhoven 1919, 10-11). I don't know whether this has ever been investigated, but it seems likely that such expert opinions, expressed by the influential Van Vollenhoven, might have kept the colonial state from attempting to introduce individual tenure. In fact, it must have strengthened their resolve to keep the natives native and their tenure communal.

The final point I would like to make is that Van Vollenhoven seems to have been too optimistic in his assumption that the residual rights would gradually fade away. At least in the case of the Minangkabau, the residual rights of the extended family are still very strong, even though most observers since the nineteenth century have asserted that the rule that ancestral land could not be sold was honored mostly in the breach (if I may exaggerate slightly). A similar story could be told about the neighbors of the Minangkabau, the Batak, who have a similar system of "communal" tenure (albeit patrilineal) (Slaats and Portier 1981).

In both areas, Western notions of individual private tenure are not unknown—and conflicts between Western and customary tenure arrangements frequently end up in court—but customary tenure is still very strong, particularly with respect to the sawah areas. Although there are certainly other factors involved, it is tempting to hypothesize that, far from trying to stimulate the individualization of customary tenure arrangements, the colonial state has "solidified" them—at least since the Adat Law School made its influence felt, but perhaps even earlier—by following a "dualistic' course" as suggested above.

If John Richards (2002: 14) was right in supposing that history teaches us that individual private tenure arrangements are inexorably taking the place of more customary, collective regulations, then this process is taking

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[11] On Minangkabau land rights see Benda-Beckmann 1979; Dobbin 1983: 14-20; Kahn 1993: 155-165; Colombijn 1994: 174-212; Scholz 1995; Biezeveld 2002: 9-121; Boomgaard 2011: 238, 240-1.

its own sweet time in various regions of Indonesia. But the possibility should be considered that he is wrong.

Environmental Roots of Land-Tenure Arrangements

To my knowledge, few scholars have paid much attention to the question of whether environmental or ecological factors have had a formative role in land-tenure arrangements. At least implicitly, however, most scholars assume—and sometimes explicitly state (e.g., Eaton 2004: 37-8)—that "communal" tenure predominated in sparsely populated areas with traditional slash-and-burn agriculture, while individual tenure was found mainly in regions with a high population density, usually sawah areas.

Before we address the question whether such a dichotomy might have an environmental background, we should first try to establish whether the observation itself can be confirmed. I cannot answer this question for Indonesia as a whole, but I am familiar both with areas where this observation does apply and areas where it does not. An obvious example confirming the dichotomy is Java, at least in the period around 1800. At that time, and probably for a long time before, many of the densely settled sawah areas of Java were characterized by individual private tenure, although in some areas communal tenure appears to have been equally strong. I have suggested above that this communal tenure may have been recent, postdating the grip of the VOC on the north coast (1743). So, before 1743 the predominant form of tenure in the thickly populated sawah areas would have been individual private tenure. Around 1850, however, communal tenure had spread over most of Central and East Java, so at that time the above-mentioned dichotomy would not have applied there. The first lesson, therefore, is that we have to specify the period.

In Sumatra between, say, 1800 and 1950 (or perhaps as late as 2000), the dichotomy did not apply in the Minangkabau and Batak areas either. Although Sumatra as a whole was (and still is partly) far from densely settled, the Batak and Minangkabau upland valleys have been heavily populated for a long time, and in many of these areas sawah cultivation was the rule (though probably more so among the Minangkabau than the Batak). Nevertheless, land was being held in customary joint tenure by the extended family or the sublineage, not as individual property. In fact, individual landed property did exist, but after one or two generations it became part of the jointly owned ancestral lands. Thus has the possible triumph of

private individual tenure—which might have been expected as the number of land sales appear to have increased—been effectively blocked.

It would, of course, be interesting to find out why the Sumatran and Javanese sawah areas differed in this respect. I have two suggestions (admittedly based on a hunch, not on definitive research). First, the Sumatran institution of *merantau*, the temporary migration of young males, was the appropriate channel for the acquisition of personal property, and many Minangkabau were traders. According to some researchers this institution was linked to the matrilineal structure of Minangkabau society.[12] This trade circuit did not need an active land market, and it was the means to acquire wealth as much as it was the means to express it. Although there was some temporary migration among the Javanese, it was not so well developed as it was among the Minangkabau, and Javanese traders did not have the same socioeconomic position as their Minang counterparts. Wealthy Javanese peasants would, therefore, be much more interested in an active land market than would Minang peasants. Second, rice from Java might have become an inter-island or even international trade commodity long before this happened with Minangkabau rice, if, indeed, it ever happened on such a scale. As the trade in rice almost inevitably brings with it credit and debt arrangements, rice land as collateral may have made an early appearance in Java.

In northern and central Sulawesi (Celebes), where sawahs were rare prior to 1900, there appears to have been a link between population density and permanent rights to the land. As Henley, dealing with the late nineteenth century, says:

> In populous Minahasa [northern Sulawesi], narrowly defined kin groups always seem to have exercised rather permanent rights to particular swidden plots even when these were not currently under cultivation. In sparsely-populated Central Sulawesi, by contrast, all of the fallow land belonging to a single village was held in common and reallocated each year by an unpredictable process of consultation and consensus. (Henley 2002: 193)

In a more recent study regarding the western part of Central Sulawesi around 1900, however, it is argued that, while the situation described by Henley might have applied to the eastern part of Central Sulawesi, it did not obtain in the Lore-Lindu region of western Central Sulawesi, where

12) But see Boomgaard 2011.

individual families had strong rights on individual swidden plots, even though, one supposes, there was little difference in population density (Weber 2006: 159-60).

Finally a few words about sparsely populated Borneo (both Kalimantan and the northern section that is now part of Malaysia).[13] It has been suggested that customary tenure was/is usual here, with a strong role for the village (or the longhouse, which is sometimes the same thing). Villages are supposed to have residual rights throughout the area. So far so good, and these data appear to confirm the dichotomy mentioned above, with strong customary rights in areas with low population densities.

Customary tenure here does not, however, always mean communal tenure, and it does appear in several cases that the community has few residual claims to the land. This, at least, is what could be concluded from research by well known Borneo scholars such as Derek Freeman (1955) and Bill Geddes (1954), among the Iban and the Land Dayak respectively, around 1950. Men create individual claims by clearing primary forest vegetation (for slash-and-burn agriculture), and rights to this land are inherited by their descendants. This is admittedly not "individual tenure" in the usual sense of the term, but neither is it communal tenure. There are, however, many instances in Borneo of stronger communal claims on the land.

Although it would thus be wrong to suppose that the dichotomy between (permanent) individual tenure in densely populated (wet-rice) areas and customary/communal tenure in slash-and-burn areas where population densities are low is or was ubiquitous in the Indonesian Archipelago, such a relationship does appear to have obtained for a number of regions. This leads us to the question whether this dichotomy may have had an environmental background.

The answer is affirmative. E.C.J. Mohr (1938) established in the 1930s that high population densities in the Indonesian Archipelago were, generally speaking, found in areas with volcanic soils and moderate rainfall, while the sparsely populated areas had non-volcanic soils and were characterised by either very low or very high precipitation.

Rainfall also plays a role in another hypothesis. This one, referring to Borneo, was originally formulated by G.N. Appell and later elaborated upon by Michael Dove (1980). It suggests that in high- and continuous-rainfall areas, relatively permanent household rights to secondary forests are recognized, while in areas with a more pronounced dry season, tenure

13) This discussion is based on Appell 1997.

was more limited, and circulating usufruct was the rule. This difference is supposed to be based on the fact that secondary forests in ever-wet areas burn more easily than primary forest, while permanent usufruct rights on secondary forests would make it more attractive to swidden agriculturists to return to the latter, instead of clearing a new piece of primary forest.

Finally, the type of crop—annual or perennial—appears to have influenced tenure arrangements, in the sense that the cultivation of perennials has been conducive to the creation of private individual land tenure. It is perhaps stretching a point, but I am inclined to regard this as an environmental factor as well. Examples are rubber in Borneo and coffee and rubber in Sumatra.[14] Lands that had been cleared for shifting cultivation, after one annual crop (dry rice) would be planted with rubber or coffee and thus removed from the swidden cultivation cycle. Such lands became de facto individual private property, acquired added value, and were usually the first pieces of land to be sold.

What has just been described took place in the nineteenth and early twentieth century. It would be worth investigating whether pepper, for instance, had played a similar role in earlier times.

Land Tenure and Its Environmental Consequences

It is generally assumed that individual hereditary private tenure of land is good for economic development (e.g., De Soto 2000), but, among scholars who have recently written about conservation and resource management, individual land tenure is much less popular, and there seems to be a feeling that customary/communal property regimes might be better suited to sustainable resource use (e.g., von Benda-Beckmann and Van Meijl 1999: 12; Eaton 2004: 8).

This might come as a surprise to those who know Garrett Hardin's "The Tragedy of the Commons" (1968), but much research has since been carried out regarding this topic, and most scholars would now agree that the Tragedy of the Commons model has major limitations.[15]

Finally, the question arises whether the history of the Indonesian Archipelago—mainly in the last three or four centuries—shows that any

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[14] Dove 1980: 9; Scholz 1995: 207; Dove 2011: 89-96; more generally, cf. Otsuka and Place 2001: 16-17; Eaton 2004: 8.

[15] For a detailed treatment of this matter see Stern 2002, particularly pp. 456 ff. See also Kleinen, this volume.

particular form of land tenure is more conducive to conservation and/or durable resource-use than any other form. The literature does not abound with cases in which property regimes can be linked to resource use, but there are several instances that look promising for our type of investigation.

The first is that of the management of open-access resources by the local ruler or rulers. Examples are sandalwood on the island of Timor, sappanwood on the island of Sumbawa, natural stands of sago in the Minahassa and on the islands of Ambon, and cassia trees in the Batak area. In all these cases the ruler appears to have taken control of the resource in question, and we should therefore probably regard it, in modern parlance, as "government property." Many of the resources mentioned here were exploited sustainably for very long periods, but overexploitation occasionally took place, as with Timorese sandalwood in the early twentieth century (De Jong Boers 1997; Boomgaard 1998: 386-8; Henley 2005).

Exploitation of such resources provided the ruler with income and reimbursed him for his expenses in "managing" it. Although one expects that the ruler was prepared to use force to defend these resources, it seems likely that supernatural sanctions (those who did not heed the injunctions would be cursed) played an important role as well, given limitations of manpower. Exploitation may have been limited by the amount of labor available—in some instances slave labor—by the price buyers were willing to pay, and by other sources of royal income. "Government property," therefore appears, under certain conditions, to have led to sustainable exploitation of natural resources.

A second example is that of the royal or aristocratic game reserves. Game reserves of indigenous rulers were known in West and Central Java at least as early as the seventeenth century and from South Sulawesi during the same period. They often survived into the nineteenth and even the twentieth century. They ought to be studied more intensively, as our information about their survival and the reasons for their disappearance are meagre. We do know that, in the case of the game reserves of the mountainous Priangan region of West Java, the colonial government was strongly implicated, as they put an end to the elevated status of the Priangan nobility and wanted to get rid of such "feudal" remnants as game reserves, whose land, moreover, was needed for agriculture.

The lands used for these game reserves were probably largely open-access resources when the rulers established them, although their legal status after their establishment is open to debate. The rulers probably regarded them as hereditary private property, and few indigenous people would

have contradicted them. One could also, however, characterize them as government property, a distinction that was not made at the time, at least not in Indonesia.

Although game reserves were established for hunting, and the rulers and the aristocracy did hunt there, these areas functioned as relatively safe havens for game as well, by protecting the areas from encroaching human habitation and agriculture (at least in one case until the colonial state intervened; Boomgaard 1997: 193-8).

A third example is that of the private estate Depok, not far from Batavia. It had been given or sold to the high-ranking VOC official, Cornelis Chastelein (d. 1714), who freed his slaves by testament and made them the collective owners of his estate. It could be argued that Chastelein had established the first Dutch-created nature reserve, *avant la lettre* to be sure, because he had decreed, also by testament, that the Depok forest was not to be alienated or cut down, and that the inhabitants were to be allowed to cut timber and firewood solely for their own use, not for sale. Thus he had ensured the survival, until the early twentieth century, of a rare remnant of lowland rain forest, in an area that had otherwise been converted entirely to arable land. In 1913, the Netherlands Indies Society for the Protection of Nature acquired control of this estate, as its first nature reserve (Boomgaard 1999: 265-7).

Here, therefore, we find conservation being encouraged under a private-property regime, though admittedly under exceptional conditions and a very specific legal regime. In fact, it was so exceptional that, although it may formally have been private property, the arrangements made by testament suggest a common-property regime.

A fourth example is that of sacred or haunted forests and mountains. Forests and mountains that were and often are regarded as "sacred" or "forbidden" exist in many areas of Indonesia. Mountains covered in climax-forest vegetation that were considered forbidden territory by the local population are well documented for Sumatra, Java, Bali, Sumba, Flores, and Timor. These traditions date back to pre-Hindu and pre-Buddhist times. Sometimes these areas contained temples or tombs, and they were believed in many cases to be the land of the ancestors, where the souls of the departed found refuge. If such places could be entered at all, it was strictly forbidden to cut wood or even to pick fruits or leaves. Though the mere threat of supernatural punishment kept the population obedient, the wild animals that were supposed to guard the forested mountains as representatives of a supernatural being were sometimes real. Tigers, for instance,

were supposed to be the guardians of many of these places in Sumatra and Java and were indeed often present. They usually did an excellent job as guardians of these forbidden mountain forests, the presence of which, in turn, provided the tigers with a refuge. Many mountain forests thus kept their forest cover, even in densely settled areas, and, around 1900, the colonial state was able to base its watershed-protection legislation on such reserves. Was it just a coincidence that the few mountains that had already been deforested almost to the top (Sumbing, Sendoro) around 1830 were in one of the few areas were the tigers, too, had disappeared?

The legal status of these mountain forests is debatable. Beginning in the early nineteenth century the colonial state had declared all forests in Java state property, assuming the power of eminent domain that the rulers were supposed to have had. Such a "domain declaration" had been issued for Sumatra in 1875, but, in many cases, the state had never really staked out its claims in the more inaccessible areas, such as mountain tops, and it could thus be said that such areas were de facto open-access resources (Boomgaard 1995; Boomgaard 2001: 179-81; Boomgaard 2003).

Finally, a few more words about the important domain declaration (*domein verklaring*) are in order, as the whole organization of the colonial Forest Service more or less hinged on this concept. This applies not just to Indonesian history but to most or all Southeast Asian countries. It was based on the legal notion—now regarded by most observers as a legal fiction—shared by indigenous rulers and colonial states, that the indigenous ruler held "sovereign" or "eminent domain" over all lands in the country. On that understanding, Governor General Herman Willem Daendels (in office 1808-1811) declared all forest lands in Java to be the property of the colonial state, making them what we today would call government property. The Forest Service—also established by Daendels, disbanded in 1829, and resurrected in 1869—was created in order to manage these state forests.

In 1875 the domain declaration was extended to Sumatra, and around 1900 preparations were under way to bring state forest management onto a similar footing to that of Java. Then, however, disaster struck, at least in the eyes of the Forest Service. This "disaster" was the analysis of land-tenure rights in Sumatra (and other areas) by the Adat Law School, the result of which was the dismissal of the notion of eminent domain. The Netherlands Indies government could then no longer base its forest-management regulations on the domain declaration in the areas outside Java, because it was deemed unlawful. In Java, forests had long been managed

on this basis, and it was no longer possible to erase almost an entire century of forest and land policy. In the Outer Provinces (everything outside Java), however, the government had to rethink its policy. This meant, in fact, that even at the end of the colonial period, arrangements in Sumatra, for instance, were not yet placed on a solid legal footing (Van Vollenhoven 1919; Gonggrijp 1932; Boomgaard 1996).

I am not proposing to do counterfactual history, and we will, of course, never know what would have happened had Forest Service activities in Sumatra acquired a firmer legal basis, but changes in the perception of legal-tenure arrangements in Sumatra probably changed the course of its environmental history, for better or for worse.

Summing up this section, it can be said that many open-access resources that had been claimed either by an indigenous ruler or by the colonial state and were thus formally "government property," did well in terms of sustainable production or conservation of flora and fauna. Details of how the "resource managers" protected their lands against "free riders" are often lacking, but in various cases the threat of supernatural punishment appears to have been important, although we do not know its importance vis-à-vis human policing forces. In the last case mentioned—the retracted-domain declaration—we can only say that a difference in interpretation may have changed the course of environmental history.

Concluding Remarks

The history of land rights in Indonesia, particularly those of Java, Sumatra, Borneo, and Sulawesi, does not suggest that various and complicated (customary) land-tenure arrangements have been gradually replaced by a more uniform set of rules—those governing individual private property—or, for that matter, the other way around. Neither can it be said that the colonial state has been instrumental in such a process of individualization of land-tenure rights.

Many cases have been cited in which the government was either instrumental in communalizing property arrangements that previously had strong individual-tenure features or in which it may have condoned customary arrangements in an attempt to keep the natives native, so to speak.

It has also been argued that, in several cases, differences in land-tenure arrangements may have been (and sometimes still are) based on variations in environmental factors, such as rainfall regimes and the presence or

absence of volcanic soil, which, in turn, influence population densities. However, not all differences can be explained in this way.

Finally, it has been suggested that government land property—both indigenous and colonial—has played a considerable role in environmental history. Conservation was, in a number of places, linked to the existence of such property, the protection of which must have been of the utmost importance, but under corrupt—and, especially, decentralized—governments the future of such arrangements is dubious at best, unless one finds an effective replacement for the (supernatural) sanctions that used to be imposed.

Another way of looking at indigenous government property in the past is to regard it as the private property of rulers and noblemen. They had the means and the will to manage large properties sustainably. (In many European countries it is thanks to the private estates of the nobility that some "nature" remains.) The fact that, in Indonesia, such arrangements were not sufficiently supported by policies of the colonial state—which was bent on communalizing rights or keeping them communal—might have worked to the detriment of sustainable resource use and conservation.

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