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# Boundary keeping and access to gaharu among Kenyah forest users

Eva K Wollenberg
Center for International Forestry Research, PO Box 6596, JKPWB, Jakarta 10065, Indonesia;
e-mail: L.Wollenberg@cgiar.org
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**Abstract.** As people living near forests in many parts of the world receive recognition of resource-management rights, questions arise about where forest boundaries should be set and who should legitimately receive these rights. Drawing on research conducted among forest-dwelling Kenyah communities in Kalimantan, Indonesia, during 1995 to 1998, I show that the realization of resource rights must be understood in the social context of how boundaries are interpreted and negotiated. Access to and control over forest resources is as much a matter of boundary keeping as of boundary setting. The analysis shows that boundary keepers assessed whether someone should be given access based on the potential user's entitlement, identity, and the potential for exchange. Understanding the 'fuzziness' of how seemingly clear boundary rules are applied should provide a more realistic picture of how groups gain and control access to resources in practice.

## 1 Introduction

In defining and dividing space, boundaries are fundamental to how people have created, used, fought over, valued, or transferred property (Duchacek, 1986; Li, 1996; Sack, 1986; Schwartz, 1974). In forest areas, increasing recognition of the customary rights of indigenous groups and promotion of community-based forest management have intensified efforts to set boundaries to demarcate forest property. Theorists and practitioners alike have come to view *clear boundaries* of these forest areas as a prerequisite for guaranteeing control over the resource and its sustainable management (Ostrom, 1990; Western, 1995).

Yet the existence of a clear boundary does not assure that access to a resource is controlled. First, boundaries must be understood both as the physical demarcation of property and as the rules describing access to that property. The one is not meaningful without the other. Second, even where both the spatial boundaries and the rules are clear, people's behavior frequently defies them. To understand how spatial boundaries and their associated rules function to maintain property, we need a better understanding of the actions of a group which is rarely examined—boundary keepers. The 'boundary keeper' is defined here as the individual or group responsible for deciding whether to grant access to property to a potential user.

In this paper, I examine why boundary keepers give some people access to a resource and not others. I look at forest collectors' access to Kenyah village territories in East Kalimantan, Indonesia, during the height of the 1993 – 96 gaharu rush to show how boundary keepers use discretionary decisionmaking. Boundary keepers made decisions based not only on formal rights associated with territorial boundaries, but also on the personalized social relationships between the boundary keeper and the potential user. The boundary keeper's relationships of shared identity or exchange with the potential user encouraged the bending of boundary rules. Seemingly clear spatial boundaries quickly became fuzzy.

The analysis focuses on the boundary rules related to gaharu, or aloeswood. Gaharu is the infected resinous heartwood of several *Aquilaria* species and is used for incense, perfume, and medicine; it was also the major source of cash for many

Dayak communities in interior East Kalimantan. Gaharu has been collected in Borneo for centuries, but since 1993, prices paid to collectors for the best quality gaharu have skyrocketed from US$300 to US$580 per kg in East Kalimantan. The high prices stimulated the most intensive period of gaharu harvesting in living memory in the region. Below, I review the factors influencing boundary keeping, and how these help to explain how local communities managed the dramatic struggles for access to gaharu during this peak period of demand. The case provides an example of village-level common-property management where there is direct interaction between the potential user and the boundary keeper.

## 2 Boundary keeping and discretion

Common-property theory suggests that knowledge of spatial boundaries and the rules associated with them are essential for a group to know which resource is theirs to manage (McCay and Acheson, 1987; Ostrom, 1999). Boundaries are statements of the rights of a group to a resource. By codifying who owns which property, they specify who has access to the property and who is responsible for its management. Clarity and precision of boundaries assist in meeting this goal by helping to avoid ambiguity or conflict about rights among groups (Baland and Platteau, 1996).

The emphasis on a clear boundary, however, overlooks the fuzzy nature of boundaries in practice (Geisler et al, 1997).

> "We sometimes seem to start out with perfectly clear, open and shut demarcations of entitlements—and then shift to fuzzy ambiguous rules of decision. I call this substitution of 'mud' rules for 'crystal' ones" (Rose, 1994, page 200).

According to Rose, although crystal-clear rules are necessary to signal obligations and interests in efficient transparent language, the contingencies of a complex world demand discretionary applications. These discretionary aspects of boundary keeping have received less attention than the more crystalline rules, yet they are equally as important for understanding the role and effectiveness of spatial boundaries. Control over a resource may be much weaker in practice than rules would suggest because of the way in which a boundary is interpreted.

We need to understand, then, what influences how a boundary keeper interprets rules. The discretion involved in boundary keeping rests ultimately on the priorities of the boundary keeper in how he or she chooses to exercise their influence over access and how far they feel obliged to adhere to the rules. In forest-community settings, where social interdependence and reciprocity are often necessary for survival, personalized interactions (Landa, 1994) between the boundary keeper and the potential user—and associated incentives—can be expected to be key factors affecting discretion. Through these interactions individuals seek to increase their wealth or to build, solidify, or structure relationships (Barth, 1969). I propose that relationships of shared identity, reciprocity, and material exchange that develop during personalized interactions determine how boundary keepers interpret and negotiate boundary rights. I use 'identity' here to mean the awareness and articulation of shared social characteristics which people use to distinguish themselves from others (Mennell, 1994).

Identity affords boundary keepers flexibility in interpreting boundaries in two ways. First, a potential user who demonstrates his or her membership of the community of entitled users is more likely to gain access to the resource. Second, a potential user sharing the same identity with the boundary keeper can create incentives or pressures for boundary keepers to grant favors in which the rules are liberally interpreted or changed (Bhanu, 1992). Because of the contingent and fluid nature of identity (Calhoun, 1994a; 1994b; Forbes, 1995), the scope for creativity in negotiating or manipulating identity to meet the boundary keepers' own interests is significant:

"The partial overlapping of local history, landscape, kinship and biography [in rural contexts] provide a richness of shared experience which can be invoked by individuals to achieve specific outcomes..." (Li, 1996, page 510).

Reciprocity or social exchange fosters discretion by requiring boundary keepers to take into account expectations of future favors or gifts from the potential user, or existing social obligations to them. Such expectations are likely to be most common among kinship groups and close-knit communities (Cohen, 1985; Oba, 1994; Peterson, 1989) in a single locality (Strathern, 1984) where members are dependent on one another (Melucci, 1988) and trust is high (Tyler and Kramer, 1996). In addition to feeling obligations of loyalty to one's family or community, people may also possess strong normative expectations to help the needy, or what has been called an 'ethic of access' (Peluso, 1996). Social exchange and identity are intertwined in that the boundary keeper and potential user can feel more of a sense of social obligation where a shared identity of kinship, community, or interdependence occurs.

Material exchange of bribes can be an even stronger incentive for boundary keepers not only to bend, but to break rules blatantly (Rose-Ackerman, 1999). Material incentives are likely to be offered to boundary keepers by potential users who cannot rely on identity or social exchange to gain access to the resource. Where groups that do have shared identity and relations of social exchange use material incentives, the social relationships appear to play an equal or stronger role in creating incentives than do economic factors (Adams, 1992; Blackwood, 1997; Reed, 1995).

Bending or breaking the rules have their limits, however. Where boundary keepers use their discretion for private gain, users are likely eventually to consider them corrupt and not to tolerate them (Rose-Ackerman, 1999). To the extent that collective action is stronger, we can expect groups to act more decisively against boundary abuses. Abuse of the boundary-keeping role is likely to be more rampant where one or a few individuals control the boundary (DiZerega, 2000), especially if they are in positions of leadership or wealth: isolation and power makes it easier to hide transgressions. Hiding transgressions is also easier where the boundary keeper can trust the potential user not to talk (Gambetta, 1988; Rose-Ackerman, 1999).

Discretion is thus shaped by factors that motivate the boundary keeper to bend the rules and the factors constraining this behavior. Motivating discretion is the boundary keeper's and the potential user's actual or constructed membership of a community or relationship to one another, and the social obligations (or material opportunities) this brings. Negotiations about identity, expectations, and exchange are at the heart of these personalized interactions. Constraining discretion is the accountability of the boundary keeper to the group and the group's capacity to assess boundary keeping and to control it. Understanding the boundary keepers' actions as a balancing act between these opposing sets of forces should help lend predictability to how discretion occurs in boundary keeping. I examine the applicability of this framework below.

## 3 Research methods

The study is based on a total of ten months of field work carried out between 1995 and 1998 by the author and a research team formed in collaboration between the Center for International Forestry Research (CIFOR) and the World Wide Fund For Nature (WWF). We conducted the research in the Upper Berau River *Adat* (customary) Area, located along the eastern edge of the Kayan Mentarang National Park, a 1.4 million ha area of Dipterocarp forest in the mountainous interior of East Kalimantan, Indonesia (figure 1, see over). The customary area is home to about 1500 Lepo' Ma'ut and Lepo' Ke (Dayak) swidden rice farmers. Population densities are low—about 0.6 people per $km^2$. Households used an average of two to three

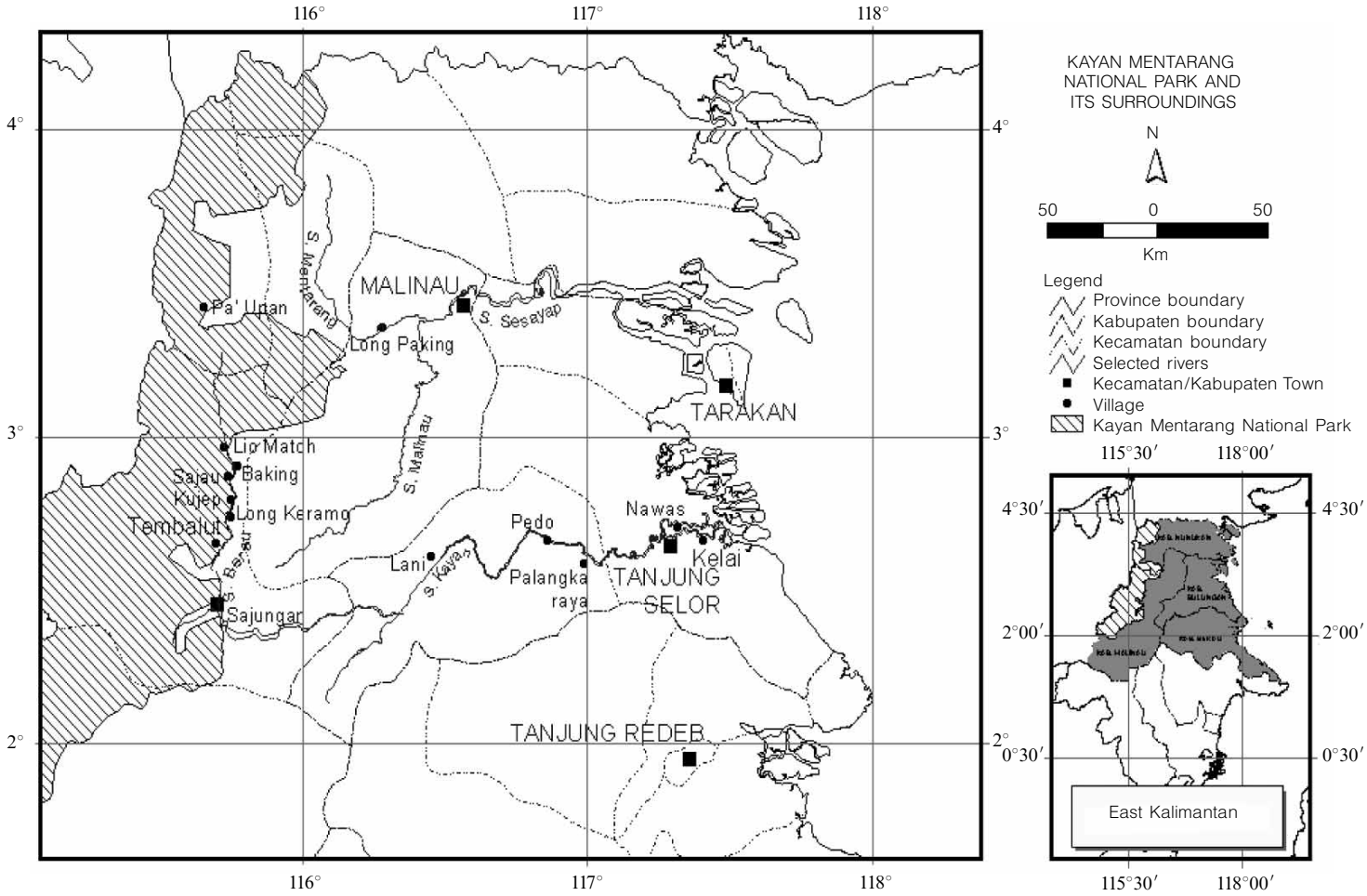


**Figure 1.** Map of Kayan Mentarang (names of villages and river in the research site have been changed).

hundred forest products annually each, with the most important products being gaharu, wild pig, several kinds of deer, timber, rattan, fruits, spices, vegetables, medicinal items, and fuelwood (Wollenberg et al, 2002).

Although we collected information from twelve villages inside and outside the customary area, for the purpose of gaining an in-depth understanding of boundary keeping, we focused on two Kenyah villages: Lio Matoh[1] and Long Keramo. Lio Matoh was reportedly more effective at controlling outside gaharu collectors, and Long Keramo less so.

Lio Matoh was a more 'traditional', remote, and socially cohesive village of fifty-eight households located furthest upstream on the Berau River. It was composed of four resettled villages of the Lepo' Ke ethnic group[2] and had four subvillage leaders or *kepala desa* (foreign terms are in Indonesian unless otherwise noted). Although the four villages had coexisted in Lio Matoh for less than one generation, strong family ties across villages, a shared history in the Upper Berau, good cooperation among leaders, and a reliance on collective economic activities encouraged high social cohesion.

Long Keramo was located about one-half day's travel downstream and was more accessible to outside gaharu collectors. Although it was comprised of a single village with members belonging to the Lepo' Ma'ut ethnic group, cooperation was lower among its seventy-two households. Brawls and disagreements among villagers were common. The chief customary leader (*kepala adat besar*) for the Upper Berau Adat Area lived in Long Keramo and was the older brother of the village leader there.

Both villages depended heavily on gaharu as their major source of cash income. A total of 73% of the households in Long Keramo reported gaharu income for the agricultural year 1995 – 1996 (Wollenberg, 2001). Average annual household income from gaharu was Rp 1137 276 (US $517). Some 38% of the households received 80% or more of their cash income from gaharu alone. In Lio Matoh, 81% of the households reported gaharu income in 1995 – 96. Lio Matoh collectors were less specialized, however: only 25% of the households received 80% or more of their cash income from gaharu, and average household income from gaharu was Rp 839 673 (US $382).

Working with local assistants, we interviewed, observed, and asked about village leaders, gaharu harvesters from the communities, gaharu harvesters from outside the communities, and traders. We collected information about gaharu-collection patterns, gaharu income, and efforts by the community to limit gaharu harvesting by outsiders. As gaharu collection was a highly sensitive subject, we often needed to piece together evidence from different sources. The story I present here is based on hours of joint analysis with the research assistants and other community members and reflects our best collective interpretation.

## 4 The Upper Berau Adat Area and its history of territorial control

The residents of the Upper Berau lived in nine villages, which together composed the territory of the Upper Berau Adat Area. Villagers looked to the chief customary leader as the person in charge of this collective area, although each village also had a government-appointed leader (kepala desa), who was often also the village customary leader (kepala adat). Each village also controlled a territory that was recognized by adjacent villages, although villages sometimes disputed the location of certain boundaries. In contrast to the view that territoriality has been imposed by modern states (Vandergeest and Peluso, 1995),

[1] Lio Matoh is treated here as one village, even though it is administratively and socially four resettled villages, or *desas*.

[2] One village is actually a blend of the Saben and Lepo' Ke ethnic groups.

headhunting stories suggest that local people maintained distinct territories and historically defined these territories according to alliances and animosities among ethnic subgroups. A village's reputation for ferocity of physical punishment was, and continues to be in some villages, a factor dissuading outsiders from entering local lands.

Until about the 1970s Kenyah leaders controlled their territories much as feudal lords under a king. Leaders of villages and the shared adat territory were selected from the communities' aristocracy. The leader of the larger adat area and leaders of villages treated territories as their property to be exploited with the assistance of commoners living under their protection (Sellato, 2001). Leaders also restricted access to some forest areas and at least occasionally demanded fees from outside collectors of forest products.

Owing to the remoteness of the area and prevalence of headhunting until the early 1900s, efforts by coastal sultanates and later the Dutch colonial administrators to administer this region were weak and limited to a few adventurous travelers and traders. The sultanate and the Dutch effectively recognized the authority of local adat leaders to control their own territories. Both the sultanate and Dutch regimes seemed to be more interested in collecting and taxing forest products than in controlling the interior territories politically (Sellato, 2001). One local informant reported that in the 1930s his grandfather organized gaharu collection for the Sultan of Bulungan through agents sent upriver. Dutch archival records indicate that lowlander groups frequently undertook expeditions in the upriver areas to collect forest products. Unwelcome collectors sometimes became the unfortunate victims of headhunting. One current village leader reported that his father took the heads of two downriver collectors who entered his territory in search of damar resin in the early 1940s. Payments were often solicited to acquire permission.

> "The inhabitants of the highlands ... want to exploit the forests themselves. They are partially supported by their chiefs, but when it is in their own interest, these chiefs allow people from the lowlands to collect forest products in exchange for money or part of the product. The inhabitants of the highlands are obviously not very happy about that ..." [Letter from the First Government Secretary to the Resident of Z.O. Borneo, 2 February 1907, translated from the Dutch by Carin Van Empel (Anon, 1908)].

In 1959 the Indonesian government passed legislation that removed the formal authority of adat leaders. At this time village heads were also appointed, although many customary leaders became village government heads and continued to wield significant influence over their villages. With the registration of village settlements in the 1960s and 1970s, the basis for territorial claims was placed ostensibly in the hands of the government bureaucracy. Weak government presence and the lack of surveys or accurate maps meant, however, that the limits of territories and access rights to them were de facto in the hands of village leaders. Legally, the lands 'belonged' to the government of Indonesia, which in the 1960s and 1970s classified nearly all of East Kalimantan as 'state forest land'. Indonesia's forestry laws limited local people's rights to forest products to subsistence use only.

In 1991 – 92 the subdistrict government requested villages to demarcate their *tanah ulen*, or protected land, as part of a collaborative effort with the WWF to maintain protected areas of forest in the national park. In 1993 – 94, the WWF facilitated participatory mapping among villages to identify these boundaries. The effort to formalize village territories led villagers into active debates about boundaries that had been hitherto left unresolved. The coincident timing of these mapping efforts with the gaharu boom meant that local communities gave more concentrated and formal attention to boundaries and who could cross them than ever before.

## 5 Gaharu and boundary keeping in the Upper Berau Adat Area in the 1990s

The gaharu boom of the 1990s stimulated villagers to define and to restrict access rights to their territories. Prices in the Berau watershed began increasing from about US\$50 $kg^{-1}$ to US\$150 – 300 $kg^{-1}$ around 1990. In 1991 the chief traditional leader in the Upper Berau began actively encouraging outside collectors to enter the area in exchange for payments. Momberg et al (1997) estimated that outsider collectors began to outnumber local collectors in the same year. Whereas most outside collectors were from downriver Dayak villages, professional collectors came from as far away as Java, Sulawesi, and Sumatra. Traders brought in harvesters from other regions to work in groups of twenty to sixty people, and even hired helicopters to facilitate transport (Momberg et al, 1997).

The busiest period of gaharu collection occurred during 1994 – 96. In 1995 the price of gaharu reached US\$300 – 500 $kg^{-1}$ and people in Long Keramo reported that outside collectors were almost a constant presence in their village. Many local collectors tripled or quadrupled their regular cash income during this time. Local people complained that the gaharu in the forest was becoming depleted. During one three-week period in 1995 our research team counted twenty-five outside collectors in Long Keramo and Lio Matoh.

During the boom, villagers—usually men—collected gaharu on expeditions which lasted one to three weeks, and sometimes as long as three months. Unmarried men in their early twenties were the most frequent gaharu harvesters. Villagers also collected gaharu opportunistically while hunting or collecting other products. Collectors extracted gaharu by carefully excising the wood containing the resinous fungal infection from the tree. Individuals could not make claims to individual living *Aquilaria* trees as they could for some timber trees or planted fruit trees.(3)

As a consequence of the increasing numbers of outside collectors, in 1991 the leaders of nine villages in the Upper Berau Adat Area, including Long Keramo and Lio Matoh, met and decided to strengthen their collective claims to gaharu against outsiders (Momberg et al, 1997). Although it was not unusual for the traditional chief leader to organize meetings with the other village heads, it was the first time that anyone could remember the meetings being used to create rules of access specifically about gaharu. Also, for the first time that anyone could remember, village leaders created a joint *written* customary law. The new, written, rules were reviewed and discussed in subsequent annual meetings.

Although these rules had no formal legal basis or recognition according to the Government of Indonesia, local people, including the government-appointed village heads and the government subdistrict leader, considered them legitimate. The continued weak presence of government in this remote area encouraged local people to rely on the authority of their customary leaders.

As part of the annual customary agreements, villages in the Upper Berau Adat Area decided to ban outsiders wanting to collect gaharu from forests within their village boundary, or what they then began calling '*tanah ulen*'.

### 5.1 The rules

The intent of the new Upper Berau Adat rules was to limit gaharu collection to the people or *masyarakat* of the Upper Berau, according to nearly all accounts from village leaders and other community members. People explained to us that they wanted to reserve gaharu for their own use and to collect the gaharu before outsiders did.

(3) Claims to forest trees and their products generally followed a simple rule: all wild resources were 'open access', that is, available to anyone to harvest, but any planted resources were the property of the planter. Timber trees were an exception to the rule, as families could mark a tree with an incision on the bark that they planned to harvest. Also, anyone could collect fallen fruits or other products. Wild gaharu was thus an open-access resource in the Upper Berau prior to the 1990s.

The principle guiding the rules was that village membership provided rights to collect gaharu. Nonvillagers required permission from the village head and should pay fees. Outsiders who entered without permission were to be sent home; if necessary their possessions would be seized and they would be charged a fine. The village leaders recommended a modest fee structure intended to limit gaharu collecting. Villagers wishing to collect gaharu in their own village territory paid Rp 2500 per collection trip; people from other villages in the Upper Berau Adat Area paid Rp 5000, and people from outside the adat area paid Rp 50 000. The fees were to be paid to the village leader and were to be used for public needs. The rules also stipulated that a local person should accompany outsiders, presumably to acquire a cut of the profits. The official boundary keeper was the village head or traditional chief leader, both of whom customarily handled matters concerning outsiders.

The chief customary leader for the Upper Berau Adat Area, village heads, and village members produced these rules in public meetings. The chief customary leader was responsible for the actual wording and recording of the rules. In practice, the members most actively participating in the meetings were those considered the *tokoh masyarakat* or prominent members of the community.

**5.2 Initial application of the rules, 1994 – 95**

Both in Long Keramo and in Lio Matoh, boundary keeping in practice was more pragmatic and 'muddy' than the rules described above would suggest. In the first two years, application of the rules was especially irregular. Local leaders either granted permission to outsiders without a fee or, more often, granted permission to the outsider for payment roughly proportional to the gaharu yield. Village members often did not pay any fee. Many outside collectors escaped the notice of the village leaders and community members altogether, except for the felled trees and campsites they left behind.

Differences in the responses of the two case study villages to the rules began to emerge quickly, as detailed below.

5.2.1 *Long Keramo*

In Long Keramo the fee structure seems never to have been used. Instead, the village leader and adat area leader asked outside gaharu collectors to provide cash contributions roughly proportional to the number of collectors or the reported amount of gaharu harvested. Although it is difficult to know exactly what these sums were, as there were no records, villages informed us that they were sometimes the same as and frequently higher than the fees (up to Rp 300 000). A local trader reported that payments averaged between Rp 50 000 and Rp 100 000. Village members did not offer, and were not pressed to pay, fees. As one village collector explained, "Why should I pay the fee when no one else does?"

The leaders in Long Keramo interpreted village membership broadly to include all people originally from the village, including their family members. Long Keramo split in 1971, with a large portion of the residents moving to Palangkaraya, a downstream village outside of the adat area. In 1995, this village had more than five times more residents (2373) than Long Keramo, although only an estimated half were originally from Long Keramo. After nearly a generation, most of the residents had developed family ties such that the number of nonresident people with access to gaharu rights in Long Keramo was considerable. Approximately fifteen to twenty other households who had migrated to other downstream villages also claimed village membership for themselves and their extended families. The village leader considered long-term residents of Keramo, such as traders and teachers and their direct relatives, as village members. Thus the leader granted access to a resident Chinese

trader's two Uma'Kulit in-laws who lived downstream. When two more-distant relatives of the trader tried to enter, however, the leader denied them access. He also did not give access to two Uma' Lasan men from Long Sam, also far downriver; these men did not have any family relations in Long Keramo.

5.2.2 *Lio Matoh*

The leaders of the four subvillages of Lio Matoh applied the fee structure more routinely both to local villagers and to outsiders. Community members quickly complained about two leaders who seemed to be receiving large payments in exchange for allowing in large groups of outsiders, especially those associated with traders. One of these subvillage leaders was paid Rp 200 000 by ethnic Kayan collectors for the 150 kg of gaharu they collected that was estimated to be worth about Rp 10 million. The other leader allowed a powerful trader to sponsor his employees to collect gaharu in the subvillage territory. Interestingly, villagers considered these two leaders to be the most respected and capable leaders in the community. After the gaharu deals became known, however, public pressure from Lio Matoh residents encouraged one leader to move to Long Keramo and become a professional trader, and the other leader began to apply the rules more carefully.

As in Long Keramo, the Lio Matoh subvillages defined village members to include people originally from the village and their families. Like Long Keramo, Lio Matoh split in the late 1960s and early 1970s, but villagers migrated to other watersheds, which made Lio Matoh less accessible to them. The level of threat from outsiders proved to be much less. Leaders treated long-term teachers and traders and their families as village members. Thus, the Uma' Kulit collectors who stayed at the home of an Uma' Kulit teacher and claimed that they were relatives were granted access. The Uma' Baka 'adopted son' of a Lio Matoh resident was also allowed in. His Uma' Kulit collecting companion was later adopted (in 1996) as well.

With this uneven interpretation of the rules in 1994 to 1995, villagers throughout the Upper Berau described the situation as *bebas* (free) and *bocor* (leaky). A number of collectors admitted that the fees and payments they were requested to pay were not *berat* (heavy). Villagers were irritated about the numbers of 'outsiders' that leaders allowed in. Many villagers, especially in Long Keramo, felt that access should be reserved for actual residents rather than being available to village members at large. Villagers became frustrated and angry as they watched gaharu availability rapidly dwindle as their leaders pocketed extra income. The nine village leaders accused each other of being weak. At the same time, they complained that they could not refuse some collectors. They explained that they could not refuse the *camat* (the subdistrict government leader and the person to whom the village leaders formally reported), who frequently sponsored collection trips in these early years. The leaders explained they had also to let in relatives, even those accompanied by nonvillage friends, because *ada perasaan* or they had a feeling (of obligation).

### 5.3 Application of the rules becomes stricter, 1995 – 96

As the leaders found their legitimacy questioned, interest in maintaining their position took priority over the income they derived from the gaharu collectors. Starting in mid-1995, and especially in 1996, leaders began to apply the rules more systematically. In the 1996 annual meeting among leaders of the villages in the adat area, leaders agreed to enforce the rules more strictly. They also agreed to forbid large groups of any kind.

Both in Long Keramo and in Lio Matoh, communities held meetings on their own initiative to discuss outside collectors' requests. During 1995 – 96, the boundary-keeping role thus shifted away from leaders to the village as a collective. A leader from Lio Matoh explained that the decision of who was an outsider was up to the village, not to him.

Village youths also took more initiative in enforcing the rules themselves. When eight Uma' Kulit collectors tried to enter Long Keramo's forests without asking permission first, a group of youths confiscated the harvesters' boat until they paid a fine to the community.

With this pressure from the community, more collectors were denied permission or were fined or expelled from the village. In 1995–96, communities also decided to give members of neighboring villages in the customary (adat) area access rights equal to those of local village members. The four subvillages of Lio Matoh also allowed each others' members to collect gaharu in each others' village territories without payment of extra fees. These actions sent a clear signal that residents of the adat area wanted to protect gaharu for their own use, while seeking to maintain good relations with only their immediate neighbors. Allowing neighbors access also emphasized that communities were not reneging on their moral obligation to help others.

As the agreements evolved and community pressure on boundary keepers increased, access to gaharu became more restricted. In 1995–96 leaders rejected collectors who did not have local family, especially those who belonged to disliked subethnic groups, distant villages, or people who demonstrated socially unacceptable behavior. Material exchange continued sporadically, especially in Long Keramo, but was used discreetly with small groups of two or three people. Box 1 provides a sample of illustrative cases where leaders turned down collectors' requests.

Once they decided to follow the rules more carefully, leaders used negotiation and face-saving techniques with collectors to whom they still felt a sense of obligation. The chief traditional leader's efforts to redirect collectors to upstream villages like Lio Matoh enabled him not to lose favor with a trader by calling upon other leaders' feelings of reciprocity or obligation to him. Village leaders also negotiated directly with one another to request one village to 'take the collectors' as a favor. Another technique used by leaders was to grant permission to the outsider, but then to yield to the community and overturn their decision. Whether intentional or not, this worked to redirect any feelings of resentment of the collector towards the leader. There were often good reasons to avoid such resentment, as collectors had their own techniques for getting what they wanted. Outside collectors' negotiation techniques included, at their more forceful, physically attacking a leader. More often, collectors avoided the leader and ignored the need for permission. Collectors also negotiated through their payments or by bringing along someone with village membership status to act as a cover for the rest of the group. Collectors working under a trader also sometimes used their more influential 'boss' to negotiate for them. Collectors who were friends or relatives of families often were simply persistent and kept hanging around a village and requesting permission until they received it. The negotiating position of collectors was weakened, though, when they behaved unacceptably (for example, drunkenness, entering forest without permission, and, in one case, rape), which caused the community to view the relationship as undesirable.

Beginning in 1995–96, downstream collectors began avoiding the Berau area and collecting gaharu elsewhere, including the neighboring, more accessible, Adat Area of Sujungan. In 1997, when the price slumped, with practically no demand for the lower quality gaharu, local collectors reported that local gaharu was already depleted. In late 1998 and 1999, the prices offered to collectors for the best quality gaharu climbed even higher to US\$1067 $kg^{-1}$. Despite the high prices, communities reported that local collectors preferred to go across the border to Sarawak to seek gaharu, as it was now more abundant there and, because of fluctuating exchange rates in Malaysia, fetched higher prices.

**Box 1.** Examples of collectors denied access to Long Keramo and Lio Matoh in 1995–96.

*Family + ten outsiders*
The village leader of Long Keramo tried to give permission to a nephew from a village outside of the adat area, who was accompanied by ten men from that village. The nephew had never lived in Long Keramo. He was considered to be of the Bakong ethnic group, as his father was Bakong and he had been born and raised in a nearby Bakong village. The nephew had worked, on and off, for two traders closely associated with Long Keramo. The men accompanying him were most likely sponsored by these traders and lived in the far-downstream village of Long Peso. The collectors belonged to the Uma' Kulit ethnic group, who had been an especially disliked enemy of the Upper Berau villages since the headhunting era. The incentives for the leader to grant permission to the group despite its large size were high: family, trader relations, and most likely the promise of a generous payment. The community protested, however, and called a meeting. They refused permission on the basis that the nephew was not a member of the village and the group was too large.

*Outsiders (thirty) with political alliances*
Thirty collectors from Long Nawang who were Lepo' Tau, an important ally of the Lepo Ma'ut, and associated with a trader applied for access in Long Keramo. The chief traditional leader denied permission and sent them instead to Lio Matoh, where they were also subsequently refused. The chief traditional leader had provided them with *surat permohonan* (letter of request) to present in Lio Matoh. The men had no family in either village. In Lio Matoh, the subvillage leader diplomatically gave permission to the collectors but sent them to an area where there was no gaharu.

*Outsiders (five) with no alliances*
In Lio Matoh, the subvillage leader who was also an active trader wished to give permission to five Uma' Kulit men who were associated with a trading partner. The community did not agree. The leader requested permission again and was refused again. Another group of Uma' Kulit men tried to subsequently gain permission from the same leader. When he refused them permission, one of the men tried to hit the leader and his nephew. They were still not granted permission and left the village.

*Resident + nine outsiders*
An Uma' Kulit man who lived in Lio Matoh with an influential teacher and had been adopted by a family there, brought nine, mostly Uma' Kulit, companions from downstream to Long Keramo and Lio Matoh. One of the members was from a downstream village that included families from Long Keramo. In Long Keramo, they were not apprehended. Two Long Keramo youths who met with the group in the forest said that *ada perasaan* (they had a feeling) for the group and did not wish to cause them trouble. In Lio Matoh, the adopted man had already gained a bad name as he had entered the forest two times without permission and had been fined. Nevertheless, the leader of one subvillage granted permission to the group. The group then 'wandered' into the forest of a different village where they were caught and asked to pay a fine. In the meantime, the members of the group were frequently drunk and unruly. The adopted member of the community raped an elderly local woman. The community was outraged and expelled the collectors from the village immediately.

## 6 Discussion

### 6.1 Importance of discretionary decisionmaking

The village leaders' decisions demonstrated the interplay of normative rules and contingency-based discretion in the maintenance of a boundary. The boundary rules functioned as a symbol of agreement and as a signal to the communities and outsiders that access to gaharu was no longer free. They later provided community members with a reference point for reminding boundary keepers of their 'contractual' responsibilities. But rules alone did not influence access to gaharu. Access ultimately

depended on a boundary keeper's interactions and relationships with a potential user. Discretionary decisionmaking allowed leaders to improve their alliances with other communities, influential political leaders, and traders. It allowed leaders to strengthen family ties. Most of all, it allowed leaders to line their pockets. The leaders' decisions varied in response to the context—different perceived opportunities for income and alliances—and, later, in response to community pressure.

Discretionary application is an inherent part of policy implementation at any level, but the Upper Berau area case suggests that certain features of small, community-based, property systems encourage particularly broad interpretation and provide strong incentives to bend or disregard rules. In the Upper Berau case, these features included:

(a) personalized interactions because the boundary keeper was well-acquainted with, if not also related to and interdependent with, the potential user;

(b) less formality than in larger, state-run, systems and negotiations conducted through discussions that were undocumented and not transparent;

(c) the closer relationship between a boundary keeper and potential user created a higher set of expectations about reciprocity;

(d) defining access by community membership created "a vocabulary of legitimation for requests to be made and pressure to be exerted" (Li, 1996, page 509) that helped to raise these expectations of reciprocity and, in personalized interactions, were hard to ignore;

(e) the boundary keeper was the leader of the collective and therefore harder for the collective to challenge and sanction.

In the Upper Berau, these traits gave leaders significant flexibility in how they used their influence over access to gaharu. Their flexibility was linked, however, to obligations to work within the moral economy of the community's extended social networks. Discretion was thus guided by certain principles of when to grant access.

### 6.2 How did leaders decide to grant access?

At first glance, leaders' boundary decisions appear to have been simply a lax application of the rules. With closer scrutiny, a logic of discretion in boundary keeping becomes apparent. Leaders and the communities applied notions of identity and reciprocity to work within the rules, and responded to material exchange to go beyond them blatantly.

Most fundamentally, leaders differentiated between insiders and outsiders according to a ranking of characteristics describing *orang kita* (our people). The higher the rank, the stronger the sense of shared identity (table 1). Boundary keepers were more likely to give access or other favors depending on the extent to which the collectors were orang kita. The ranking of identities meant that boundary keepers were more likely to grant access with the following preferences (from highest to lowest):

(a) 'core villagers' who shared a common residence and leader, and maintained a common subethnic and kinship affiliation with the community;

(b) long-term village residents who did not share the ethnicity of the local village (usually traders, some teachers);

(c) nonresidents, but members of neighboring villages in the Berau Adat Area;

(d) nonresidents, but members of other villages in the Berau Adat Area;

(e) nonresidents with village ethnic or kinship ties;

(f) nonresidents with ties to long-term residents;

(g) nonresidents working for nonresident traders affiliated with the village; and

(h) nonresidents with no trader or village relation.

**Table 1.** Scale of identity traits defining *orang kita* (our people), ranked from high to low.

| |
|---|
| Family, nuclear |
| Extended family, not by marriage |
| Extended family by marriage |
| Subethnic affiliation, for example, Lepo' Ma'ut or Lepo' Ke |
| Social class, for example, aristocracy, commoner |
| Village, physical location of residence |
| Neighboring village |
| Adat region |
| Historical alliances among ethnic groups from headhunting period |
| Religion among Christian groups |
| Ethnic affiliation as Kenyah/Dayak |
| Christianity among all religious groups |
| Eaters of pork and noneaters of pork |
| Indonesian |

The categories of orang kita were discernable from the discourse, actions, and events in the villages. Villagers referred to most people who were not Kenyah as *kelunan alo*' (a Kenyah term for foreign or outside people). Jokes, stories, and deprecating statements about people of 'other' groups indicated further differentiation. In the presence of an 'other' group, villagers would often make derisive comments in the local language using code words referring to the other group's behavior, dress, or color. Levels of comfort and openness varied noticeably with different groups. The ranks were also reflected in how people made day-to-day decisions about their networks of trust and priorities for mutual aid.

Thus, resident villagers who shared a common leader, ethnic group, and family relations (and later adjacent villages) enjoyed access to gaharu with the fewest restrictions. A larger group of nonresident villagers gained access when the leader deemed them a member of the entitled community, or because he felt socially obligated or was interested in strengthening an alliance. Potential users who ranked low on the hierarchy needed to provide leaders with material incentives to gain entry, effectively sidestepping the rules. Leaders were also often interested in maintaining good relationships with this group, which typically included traders, other village leaders, government officials, or police. These individuals were often vital to the economic and political health of the community and helped maintain the influence of the leader. They also often brought substantial material rewards. Hence a third group of mostly professional traders bringing in large groups gained access because they were able to offer large payments to the leader.

As resident gaharu collectors saw their gaharu supplies continue to decline rapidly, the criteria for judging entrants subsequently moved up the hierarchy to become more exclusive. Communities pressured leaders to exclude the professional traders' large groups. They also pressured leaders to not grant access to friends of community members. The communities cared less about gaining access to the payments or alliances associated with these collectors, than about the lost gaharu income. They wanted to reserve that income as much as possible for *'orang kita'*.

### 6.3 The parallel ethics underlying discretion

The leaders' rationale for granting access to different groups suggests that the line between moral obligation and corruption is not always clear in community-based maintenance of property. On the one hand, "the traditional ethos of attachment to the old survival unit of the family or clan ... dictates that a more well-off member should not deny even distant relations a degree of help if they ask for it ..."

(Elias, 1991, cited by Mennell, 1994, page 178). When leaders gave collectors access because '*ada perasaan*', they were justifying their actions according to a parallel set of ethics. Discretion in the Upper Berau thus involved not so much the bending of rules, as the employment of different rules. This suggests that discretion becomes more complex where more pluralism of rules and values exists, for example, where decisionmakers feel bound to obey rules *and* family obligations.

On the other hand, the interpretation of moral obligation in the Upper Berau was manipulated in ways that reflected the boundary keepers' and potential users' self-interests. In the pre-1995 period, leaders almost went out of their way to create opportunities to legitimize the granting of access to nonresident groups, as long as someone with a kin or community affiliation accompanied the group. The leader, accorded the friends the same status as the village member 'out of courtesy'. The leader felt obliged to help the village member, but the leader also was surely calculating that a larger group would bring him a larger payment. Youths from Palangkaraya played upon these obligations and possible rewards to cajole leaders to grant them access. Whether genuinely felt or not, leaders also appeared to hide behind these obligations as excuses for making decisions with which the resident community disagreed. Moral obligation was as much a mask for corruption as a real need.

**6.4 The limits of discretion**

Communities helped to limit discretionary decisions by acting collectively to challenge leaders. As the benefits of reciprocity and material exchanges did not directly help the communities, it was predictable that the communities would eventually reject the leaders' profiteering behavior and seek to regain control over gaharu for themselves.

How were such limits imposed? Most often, especially in Long Keramo, villagers expressed their discontent informally through complaints to one another. Over time these accumulated so that the leaders were made aware of threats to their legitimacy as boundary keepers. As community members saw leaders continue to abuse the rules in the name of 'moral obligation', their frustration grew. Internal conflict rose and community members eventually forced leaders to modify their behavior. When leaders feel less confident about the legitimacy of their decisions, it can be expected that they will rely more directly on the rules rather than on identity or exchange-based decision criteria. The chief customary leader in Long Keramo felt more confident, because of his higher status, than did village leaders in Lio Matoh.

The residents of Lio Matoh appear to have been more successful than those in Long Keramo in constraining the self-interest of their leaders. A comparison of Lio Matoh and Long Keramo suggests that cohesive communities are likely to act more quickly and effectively in response to perceived abuses of boundary keeping. Lio Matoh's isolation encouraged their leaders to be more internally focused (the one leader who was externally oriented left) and implied that they faced less complex trade-offs in meeting social obligations with outsiders. In Long Keramo it is also possible that because the boundary keeper was the chief traditional leader, people felt more uncomfortable challenging him too quickly or directly. The takeover of the boundary-keeping role through community meetings supports Armstrong's (1991) observation that hierarchy in Kenyah social structure does not restrict villagers from protesting and taking their own course of action, even when it means conflict with a leader.

## 7 Conclusion

How communities actually maintain their common property can differ substantially from what their rules suggest. A better understanding of the role of discretionary interpretation of boundary rules should help predict where boundaries are likely to be effective and how they can be improved. In this study I have drawn from theories about property, collective action, and identity politics to identify how identity and exchange relations between a potential user and a local boundary keeper affected how village leaders allocated access to gaharu.

Boundary decisions in the Upper Berau were indeed much fuzzier than the rules would have suggested. Boundary keepers, village members, and potential collectors each used the influence and parallel ethics available to them to exercise discretion over access and to enhance their own benefits from gaharu. Many of the features that encouraged discretion in the Upper Berau are common in community-based systems elsewhere, including personalized, informal, and nontransparent interactions; expectations of reciprocity and an ethic of assistance to extended family; and the reliance on a concept of community as the main criterion for access.

As other interest groups, such as governments, seek agreements with communities about management of forests, they are likely to emphasize the need for clear boundary rules and may overlook the importance and nature of discretion. Such agreements will, at best, be reference points for guiding decisions about access. Too much reliance on or enforcement of such agreements could be counter-productive as conflict over their meaning is inevitable.

Instead, a better understanding of discretion would enhance cooperation among groups in their agreements about boundaries. Such understanding would recognize the positive attributes of discretion in enabling flexibility, which can be vital to effective resource management and to reaching compromises that better reflect the values of the community. However, it would also acknowledge the need for limits and checks to discretion to avoid excessive self-interest by a boundary keeper.

The following are some examples of checks:

(a) increase the transparency of how boundary keepers make their decisions;
(b) have the community take on the role of boundary keeping as a collective; or
(c) avoid identity-based criteria that are subject to broad interpretation in favor of more 'objective' criteria such as years of residence (although some degree of interpretation is inevitable).

Boundary drift should be anticipated. Normative expectations of assistance to family or community members are likely to persist. Our understanding of property can thus benefit by anticipating how discretion occurs and guiding it constructively. Well-defined boundaries may be less important than the social interests surrounding them.

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