

## Rain Forest Conservation in a Tribal World: Why Forest Dwellers Prefer Loggers to Conservationists

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### ABSTRACT

In Papua New Guinea, the fate of forests is governed by forest-dwelling tribal societies. A rapidly increasing pace of logging compels us to ask why tribal communities prefer logging to conservation. In the absence of feasible development opportunities, remote communities become quickly enthusiastic about conservation projects, but once an area is opened up to logging few such projects survive. Direct payments to forest owners to cover the costs of missed opportunities for economic development are advocated here to make conservation competitive. A conservation royalty scheme would deliver a higher proportion of the conservation funds to the resource owners than the management-intensive community development projects currently favored. Such an approach requires a profound cultural change within conservation organizations from a 'development aid' approach to one more oriented toward business.

*Key words:* carbon credits; ICDP; indigenous communities; land rights; logging; Papua New Guinea; tropical forest.

### TRIBAL VOTE AGAINST FOREST CONSERVATION

Papua New Guinea should be a conservationists' paradise, given that the fate of its forests is in the hands of forest-dwelling tribal societies that own 97 percent of the land in the country. It is one of the few countries in the world where customary ownership of the land, originating in a tribal past, is recognized by the country's legislation and enforceable reality on the ground (Sekhran 1997, West 2006). Papua New Guineans are thus among the most empowered landowners in the developing countries of the world.

If the inhabitants of tropical forests were minded merely to preserve their traditional lifestyle in harmony with nature, conservation of the forests of Papua New Guinea would be quite simple. Unfortunately, the reality is rather different. During 1972–2002, 15 percent of the country's forests were cleared and 9 percent were degraded through logging (Shearman & Bryan 2010). For instance, in a recently opened 100,000 ha logging concession of Ramu Block 1 near the town of Madang, 90 percent of landowners opted for logging, and 10 percent, represented by the Wanang village, for conservation (Fig. 1).

This trend has global significance since New Guinea is the third largest remaining area of tropical forest after the Amazon and Congo basins, and supports 5 percent of global biodiversity. The growing intensity of logging in Papua New Guinea raises some intriguing questions, notably why so many tribal communities apparently prefer loggers to conservationists, and what conservationists might do to endear themselves to indigenous forest owners.

### CIVILIZATION TRENDS: TREE HUGGING OR TREE FELLING

To the tribes inhabiting the central mountain ranges of New Guinea, the outside world was unknown, and they themselves were unknown until first contacted in 1930 (Leahy 1991). They independently invented agriculture, and in so doing initiated deforestation, later mitigated by arboriculture, particularly by the planting of nitrogen-fixing *Casuarina* trees. At the time of the first contact, the highland tribes inhabited a largely anthropogenic landscape, carved out of the original forests by means of stone tools. The mosaic of groves, cottages, grasslands, and cultivated plots of land resembles European highlands to a quite remarkable degree.

The New Guinea lowlands offer a strikingly different picture. The lowlands have the highest incidence of malaria outside Africa, and malaria is probably the main factor contributing to the low population density of *ca* 6 people/km<sup>2</sup> (Riley 1983). The New Guinea lowlands can thus be considered an ecologically marginal environment for human habitation lacking access to comparatively advanced technology, and this explains why they remain largely forested today. The limited damage done by forest-dwelling populations to lowland forests also appears to be a consequence of technological impotence than of free choice. The replacement of stone axes by steel ones, and these in turn by chainsaws, has finally provided the lowland communities with the efficiency to pursue the developmental trajectory already charted by their highland neighbors several thousand years ago. 'There is little robust evidence that . . . "traditional" societies . . . have been natural conservationists. On the contrary, wherever people have had the tools, techniques, and opportunities to exploit natural systems they have done so' (Oates 1999).

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FIGURE 1. Does money grow on trees? Conservation royalty payment of K10,000 (U.S.\$3680), in K10 (U.S.\$3.80) bills displayed in traditional fashion on bamboo stalks, made to ten clans from Wanang village (Papua New Guinea) for conserving 10,000 ha of primary forest in 2009, while their neighbors opted for logging.

## CONSERVATION EPIPHANY OF FOREST DWELLERS

Remote villages in tropical forests are objects of intense competition. Conservationists with plans for preserving biodiversity, entrepreneurs with contracts for extracting timber, politicians hunting for votes, missionaries of every denomination, and social engineers wishing to create an idyllic rustic commune, all descend on these villages with a view to converting their hitherto untroubled inhabitants to their particular ideology.

A remote forest community may seem a good place to start a conservation project. Yet low population densities, limited technologies, and subsistence agriculture are not conducive to the emergence of a conservation ethic as these forest-dwelling societies face little pressure to develop management for resources which are not in short supply (Holt 2005). Although New Guinea lowland communities tend to lack attitudes that favor conservation a priori, they become quickly enthusiastic about conservation when approached by conservationists (Novotny 2009). The technology introduced by outside persons is associated with the ideology the latter are promoting. Thus nothing could be simpler than to convert an entire village to environmentalism—not to mention scientism, Christianity, or Dadaist poetism—because the heralds of these ideologies are living proof of their success. Conversions to conservation often do not survive competition with the alternatives afforded by logging and other enterprises when these later present themselves. Switching from conservation to logging will remain the rational strategy as long as landowners are not properly compensated for the conservation of their forests.

Forest conservation looks deceptively inexpensive since, if conservation is successful, not much happens to the protected forest. In fact, the true cost of conservation is equal to the potential profits that could be generated by alternative uses of the forest: conservation's opportunity cost. These profits may rise from near zero in remote communities to very high for communities located near a logging frontier. In countries where indigenous communities do not enjoy strong land-ownership rights, conservation rules imposed on forest dwellers can seriously impact their livelihoods.

## IF RAIN FOREST DWELLERS RUN A COFFEE SHOP

Forest conservation is a service that can be traded between the interested parties. In the relationships between forest owners and conservationists, there appears to be some confusion about who is the customer and who is the service provider. Some conservationists like to think that conservation is an inherent interest of the forest owners, whether they know it or not, and that they are there to help the rain forest-dwelling communities to realize their long-term conservation dream. Forest owners, on the other hand, interpret the often unsolicited arrival of conservationists as that of customers seeking conservation services from them. From their perspective, they are justified in expecting financial benefits for providing these services, and in weighing them against benefits accruing from alternative options, such as logging. Indeed, many rain forest communities strive and struggle to overcome their isolation and participate in economic and social developments taking place elsewhere. Forest conservation proposals are bound to be examined for their potential

to bring social change, rather than conserve *status quo*, and are likely to be approved primarily as a promising method of connecting the community with the rest of the country.

Conservationists, faced by the prospect of endless payments required to sustain the conservation effort indefinitely, and perhaps also with the motivation of alleviating poverty among isolated rural communities, have developed the concept of sustainable conservation. In this context, sustainability means that landowners are asked to protect their forest in perpetuity in exchange for assistance in launching new and hopefully profitable businesses, an ecotourism lodge perhaps, through which they will generate profits in lieu of direct payments for providing conservation services (Ferraro & Kiss 2002). The merits of this strategy may be best illustrated if we apply it to some essentially mundane business. If the indigenous communities owned a house for rent, instead of a forest, the conservationists, following their strategy of sustainability, might wish to settle in their house for free as the *quid pro quo* for helping to launch an entirely new business, perhaps a coffee shop on the ground floor, which would generate the profits needed to pay for the conservationists' rent.

Small wonder that this business strategy fails to excite even the least economically savvy forest owners. Despite decades of investment in conservation, I am not aware of a single large rain forest in Papua New Guinea that has been successfully protected when a choice between logging and conservation was available to its landowners.

The extraction of marketable forest products is also failing to support conservation because in many cases a 'sustainable' harvest of such products from otherwise protected forest tends to be a transient stage, quickly leading to overextraction and exhaustion of the natural resource, or to the replacement of the forest with a plantation of the profitable species in question. In the 1990s, the villagers around the Sepik river learned that *Gynerops ledermannii*, a seemingly useless tree species, is a source of agarwood, a valuable fragrant substance. The agarwood harvest by the forest owners exhibited similar dynamics as selective logging of timber trees by a commercial company, with the resource owners enjoying staggering but brief increases in their income. After a few years, the extraction frontier moved on and the village returned to subsistence agriculture.

## FOREST CONSERVATION: BUSINESS AS USUAL

Charging for ecosystem services, such as carbon sequestration, may be a more feasible way of extracting long-term profits from tropical forests. This is particularly true in Papua New Guinea, where carbon credit schemes are considered both by the government and the forest owners (Melick 2010). Although compensations for stored carbon may provide significant income to forest owners in New Guinea under most scenarios of future carbon trading, it could also promote forest management practices maximizing carbon storage but damaging biodiversity. It would be ironic if carbon provided a funding mechanism for forest conservation when all the amazing forest biodiversity apparently could not.

Direct payments of biodiversity conservation costs to forest owners, advocated here as a strategy essential to make conservation competitive with logging offers, is not a new concept (Ferraro & Kiss 2002). Conservation in developed countries relies on direct financial incentives, including land purchase, lease, or tax relief, while in tropical countries it remains focused on indirect approaches, such as Integrated Conservation and Development Projects (ICDPs). Is this another example of outdated, substandard technology being dumped on developing countries?

Direct payment for conservation can emulate well-established markets paying smallholders for their agricultural produce, including coffee, cocoa, or vanilla. These markets demonstrate that payments for certain land uses, such as a coffee plantation, can work well among forest-dwelling communities, and might be promoted through landscape-scale certification schemes for conservation services (Ghazoul *et al.* 2009). Analogous payments for a forest reserve can be equally successful, particularly if they are made directly to the landowning families, which thereby minimizes opportunities for corruption, as is often the case with logging royalties.

The ICDPs prefer barter to monetary transactions, exchanging conservation for community assistance. For the conservation to be attractive, it is important that payment for conservation can be used by the recipients as they deem appropriate, rather than being an exercise in social engineering, steering the forest owners only to the kind of 'worthy' projects favored by the conservationists.

Direct payments are inherently more straightforward than ICDPs, which also have to organize the spending of conservation funds. Royalty schemes would thus deliver a higher proportion of the total budget to the resource owners. They could be offered to a wider range of forest-owning communities and reward them on competitive basis, considering the conservation value of their resources and their ability to conserve them. The communities in strategic locations near the logging frontier could be preferentially targeted by such schemes. Many forest areas could easily enroll in such schemes, thus providing a large pool of communities for further selection of those most dedicated to conservation. This is preferable to the ICDP approach, which requires intense work within the recipient community, so that only a few communities can be ever offered this option. Some communities will inevitably opt out of the conservation scheme after some time, leading to the loss of the royalties already paid to them, while others might prefer lower but longer-term conservation payments to logging royalties.

There are few data available on the market costs of forest conservation to be paid to forest owners. Sadly, after decades of investment in forest conservation, we have little idea of how much this service is valued in monetary terms by the forest owners. This valuation will depend on location, attitudes and aspirations of the forest owners, and alternative options for the use of their forests. Experimental royalty payment schemes implemented in various communities are needed to explore this issue. For instance, the Wanang village landowners found the U.S.\$2.0/ha/yr in royalties and salaries for assistance in biological research sufficient to resist logging offers for a 10,000 ha of their forest (Fig. 1).

Why are community development approaches to conservation tried time and again despite their record of failure, while methods

of direct payment, which are readily implemented in industrialized countries, are rarely used in the conservation of tropical forests? This change of strategy would require a cultural change from 'development aid' approach to a more business-oriented attitude to conservation. ICDPs project conservationists act as aid workers who 'help' the communities in question. In reality, conservationists are just another group of customers shopping in forest villages for their preferred service.

For considerable time, the conservation of tropical forests has been a cultural choice made by many people worldwide. It is, however, neither necessarily of interest to the forests' inhabitants and proprietors, nor is it necessarily in their interest. Forest dwellers, rather than being 'ecologically noble savages' exhibit the same healthy mix of traditionalism and neophilia as people from industrialized societies. They are entirely right to consider various options in order to further develop their communities. The global machinery of nature conservation remains, regrettably, remarkably inept at presenting indigenous owners of tropical forests with a decent offer in exchange for their continued management and conservation of a substantial amount of the world's biodiversity.

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