

INSTITUTE OF CURRENT WORLD AFFAIRS

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Mr. Peter Bird Martin
Executive Director
Institute of Current World Affairs
4 West Wheelock Street
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Dear Peter,

My visit to the Teleng logging camp was both pre-planned and essential. When I reached the camp by Kenyah longboat in early June, the Balui River was rising to its highest flood in two years, 40 feet above normal. Further progress up the Balui over Bakun rapids was impossible, due to the swift current and unpredictable whirlpools. Prior to this visit, I had wandered around several other logging sites in Sarawak, but had not observed the full range of operations at any of them, nor had I been able to interview a variety of workers and managers, nor stayed long enough to get a sense of the life of the camp. At Teleng, I had an opportunity to ^{do} all of these before continuing upriver.

The flood also brought work at the Teleng camp to a standstill, since logging roads were submerged and the heavy-duty vehicles would sink in the mud. Anyone whose work was in the forest rather than the camp itself had the day off. It was a good opportunity to poke around and ask questions, as there was no shortage of people to show off the camp's highlights. The loggers were eager to explain their work, chopping kayu (felling trees).



Location of
Teleng Logging Camp

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The cleared area stretches several football-field-lengths along the river, with log piles, fuel tanks, and equipment storage at the downriver end and camp buildings upriver. Most of the structures are built of timber taken from the initial cut at the camp and chainsawed into posts and planks on-site. They include several rows of barracks-like housing, an open-sided dining hall (with access stairs thigh-deep in water when we arrived) and a recreation hall the size of a Wisconsin barn with badminton court, ping-pong tables, and a video theater with graduated height benches.



The camp also boasted a sparkling, air-conditioned office overlooking a bank of bulldozer/tractors and various kinds of log moving rigs, their idleness belying collective thousands of horse-power. The walls of a small room off the end of the main office were covered with topographic maps. Mr. Ling, a camp manager, and Mr. Tu, the accountant, traced the outlines of the forest concession the Teleng company has been contracted to work, pointing out landmarks, already-built and planned logging roads, and the hilltop areas too high to log, appropriately colored green. Detailed topographic maps such as these are hard to find in Sarawak. They are considered security documents, a legacy of Malaysia's konfrontasi with Indonesia in the 1960s and a Communist underground whose members only "returned to society" when they were offered amnesty in 1974.

The concession area, 125,000 hectares of mainly mixed dipterocarp forest, has been divided into 25 annual coupes (areas to be logged over one-year periods), coinciding with the Forest Department's "bicyclic" 25 year cutting and regeneration policy, and usually with the 25 year period of logging concessions. Each annual coupe area is further marked into logging blocks of approximately 300 hectares, numbered consecutively on the map. Mr. Tu pointed out the areas that had been logged since the Teleng operation began sending logs down the river in 1984, and pointed out others with only young secondary forest, due to recent shifting cultivation, that were not suitable for logging. Blocks currently being worked were lightly circled in red. The Teleng management was fully familiar with the requirements of the Forest Department's long term Working Plan for the concession area, based on a pre-licensing survey, and with the approved short term felling plan.

Timber production from the Teleng operation varies according to the weather. In an average month, the camp floats 5,000 tons of logs downriver. In rainy weather, a yield of only 3,000 tons per month can be expected, while the camp counts on 7,000 tons in the dry season. That's a lot of trees. At an average of about 3 tons of saleable logs ("round wood") for any of the hardwood giants the loggers consider worth cutting, the Teleng operation pulls between 1,000 and 2,300 trees out of the forest per month. At an average of about seven trees per hectare, considered normal for hill forest logging in Sarawak, the Teleng camp is selectively logging 240 to 330 hectares per month, or around 3,500 hectares per year. (The difference between that amount and the 125,000 hectares of the concession is accounted for by land deemed unsuitable for logging, such as hilltops, streambeds, and young secondary forest.)

The Teleng camp, like most others in the area, cuts only a few generic types of wood, perhaps 50 species in all. The major types of timber cut are Meranti and Selangan Batu (both groups of Shorea species), Kapur (Dryobalanops spp.), Bindang (Agathis alba), and Keruing (a Dipterocarpus). These are high-value woods. Export prices for these logs in 1985, according to the Forest Department's latest Annual Report, ranged from M\$ 110 to M\$ 183 per cubic meter. Prices have fluctuated since then, but the general trend has been up. (The June 1987 exchange rate for Malaysian to U.S. dollars is about M\$ 2.50=US\$ 1.00.)



Measuring and grading log

Mr. Tu explained that current production costs for the logs coming out of Teleng were about M\$ 80 per ton, including transportation down the Balui and Rajang Rivers for shipping or processing. (I'm not sure exactly what that production cost includes, but his point was to show that at current prices for the logs produced, that far upriver the profit margin was slim. Actually, even if the margin is only M\$ 10 per cubic meter of wood, the return is certainly well worth the investment.)

By the next morning, the flood waters had receded, leaving behind a coat of foamy mud to mark the previous day's event. Logging equipment started to move out in the fog before sunrise, as the fighting cocks in their coops beneath the barracks began to crow. (During peak logging periods many of the riverside operations can be done using headlights or floodlights, with work continuing into the night.) After a Borneo lumberjack breakfast -- rice, fried ferns, soup, and optional canned meat with kidney beans -- my visiting group joined one of the camp's foremen in a pick-up ride to the logging site where we would spend the day.

I counted myself lucky not to be loaded down with fragile photographic equipment. Our party included Philip Hii, a photojournalist from Sibul working on a video project documenting life in rural Sarawak, Paula Gillen, a photographer on a Fulbright fellowship at Universiti Sains Malaysia in Penang, and her husband Tim Richards, a film-maker. During the hour long gut-busting ride, I discovered why the loggers prefer to stand, facing the wind and hanging onto the truck's roll bar rather than trying to sit in the back. After the seventh roller-coaster hill, I asked a fellow passenger, a veteran logger, if there were ever any accidents. "Tidak," he reassured. ("Nooooooo," he repeated in English.) I grinned my skepticism. Laughing, he revised, "Sometimes..." I continued to marvel at the logging roads, feats of engineering, and the massive log-and-earth bridges spanning the streams. Modern North American foresters would probably scowl at some of the steep grades and sharp turns, as well as their general lack of inward slopes and culverts to prevent erosion, but the trucks are able to move over them at break-neck speeds, so I guess they work. But our first stop was to inspect a recent pick-up wreck below the approach to a bridge. I decided another good reason to stand in the truck is to facilitate jumping off in case of a missed curve.



Log and earth bridge on main logging road
(pick-up wreck on left side)

After checking out a few other sites to get reports on the condition of each after the heavy rains, we whizzed up a final hill and climbed down by a couple of houses at the side of the track. Two loggers' families live there, and the young women pointed the way to the skid trail to the felling area, as the pick-up trundled along to its next errand.

Although still before 9:00, the sun on the logging road was already sending dusty rivers of sweat down my back, and it was a relief to get into the shade of the forest. The logging crew we met had four men, standard for the Teleng operation and most other camps in the area, when they took a maintenance break, the forest's silence was overwhelming. No chainsaw whirr, no logging truck or bulldozer/tractor rumble. But also no bird or lizard calls, and the standard din of jungle insects was reduced to the very occasional scream of a few cicada-like beings without the sense to go to sleep in the heat of the day. We introduced ourselves to the crew, but I forgot to write down all the loggers' names and have since forgotten them, very embarrassing. While the sawman replaced his broken chain and the tractor driver scoped out the scene below his parked machine, I learned from one of the two assistants that felling along this particular skid trail had only begun the day before the heavy rain that had caused the flood, and the trail had only been worked two days. Trees were now being cut at the end of the trail, about 600 meters from the logging road. The crew hoped to make another 300 to 400 meters that day. The skid trail was steep, with about a 30 percent slope. The crawling tractor tread was deeply incised in the yellow earth of a broad trench, formed by the bulldozer shovel ahead and the heavy logs being dragged up the hill behind. The trench was about three meters wide near the road, but got narrower toward the end. Next to the trench, on the natural forest floor, a cross-section of fallen leaves, other debris, and dark topsoil had been exposed.

Once the saw was replaced, cutting resumed and the tractor jockeyed into position. The chainsaw operator cut rapidly through the thin tops of the buttresses of the Meranti tree before beginning on the center of the trunk. (At this time, on each tree, he pointed all spectators back up the hill in case the tree fell unpredictably.) He placed his wedge-cuts precisely, to control the direction of the tree's fall. Little warning is given when a tree finally cracks and gives way. When the cutter thinks he's cut enough, he simply stops and may wait a moment until the muffled cracking noises start. These are followed by sharper staccato cracks and maybe some creaks, and the beginning of a rustle and storm of cracking as the tree starts to lean, stretching liannas and the other trees they're attached to. Cracking and tearing of neighboring trees sounds like the whole forest is popping until the earth-shaking reverberating crash of the sawn tree hitting the ground, and the quieter impact, like an echo, of other branches, trees, and vines following it toward the forest floor.

Once the tree is down, the sawman moves to cut off the crown. The driver, if he is not still pulling another log to the road, then pushes toward the base of the fallen tree, while the sawman may go looking for the next tree to cut. When the driver has bulldozed a path to the tree, he and the assistants mark places to cut the log into shorter lengths. At the Teleng camp, the maximum length of logs appeared to be about 15 meters. The driver maneuvers to allow the assistants to loop a steel winch cable around the close end of the log, once it is a suitable length, and begins to wind the cable in, eventually raising the close end of the log.

The tractor climbs up the trail until the cable is tight, then alternately pulls the log along behind and lets out more slack cable to let the log adjust its own direction up the trail. In this way, with dozens of logs pulled up the same trail, the trench-like route is widened and deepened.



Sawing the trunk into smaller logs

Strategic planning of the skid trails to optimize the trade-off between hitting all the high-value trees and taking too much time to drag them out is a skill highly prized among loggers working in a selective cutting system. In a good hill forest block, there is an incentive to work quickly and as long as possible, since pay is according to the amount of high-quality timber cut. State logging standards discourage excessive back-tracking on any skid trail, and sharp turns; these measures are meant to minimize soil compaction, erosion, and damage to remaining vegetation in general, and small or medium-size trees in particular (the "residual stand" or "advance regeneration"). However, these rules did not seem to be determining factors in planning the skid trails I saw. The loggers explained that the forest officers who inspect their sites rarely impose fines except for returning to blocks that have already been declared closed to further logging. However, there was a pride of craftsmanship in executing a clean, narrow trail directly to all the best trees, and getting them out with a minimum of disruption to the surrounding forest. Loggers who can produce these efficient and environmentally conservative trails through selecting the right trees and controlling the direction of their fall are much in demand.

The actual work of the sawman and tractor driver are fairly separate, although the two must agree in order to be an effective, safe, and profitable team. Tree selection appeared to be completely at the discretion of the cutter and the driver, although in theory the logging block is supposed to be pre-surveyed. I saw no evidence of any prior marking of trees to be cut or left standing.

Sarawak logging standards prohibit loggers from cutting trees under 45 centimeters in diameter at chest height. This regulation for selective

cutting in the hill forest is supposed to protect medium-size trees for the next round of logging, at least 25 years in the future. Several loggers speculated that in an area as remote from processing facilities as the Teleng camp these smaller trees are not worth cutting anyway at current prices. However, plenty of younger trees, saplings, and lower-storey vegetation were knocked down or damaged during the logging day. However, some large hardwood trees were left standing, if either the tractor operator or the sawman believed they might be rotten or hollow inside, sharply reducing the value of the log and making it not worth the time to cut it and drag it out.



Looping a steel cable around a log to pull it through a turn in the skid trail

It takes less than ten minutes of actual cutting to fell a tree over half a meter across. On this two day old site, the process of finding a tree to cut, felling it, sawing off the crown, cutting it into shorter logs, and dragging it away seemed to take between half an hour and an hour per tree. Generally, the farther away from the road a felling site is, the better the trees need to be to make it worth continuing to cut along a particular skid trail, since it takes more time to drag the logs back to the road as the skid trail is extended. However, Sarawak logging rules require that once a block is opened for logging, it must be logged thoroughly, perhaps farther from the road than a logging team would like to go.

This is no Christmas tree farm being cut. The logging process in Borneo's rainforest is awesome, due to the power of the machinery at work and the living magnificence of the hill forest itself. As a sentimental environmentalist rather than a logger or professional forester, I think I'll always be profoundly impressed by the speed of the assault -- the chainsaw's long arm slicing through its target, followed by the tank-treaded bulldozer pushing through the lush understory to haul away the saw's prey.

Although there is little to prevent logging contractors or timber concession holders from attempting to plant new trees on areas of a concession that have been deforested, either by shifting cultivation landslides, or other causes, the Teleng operation engages in no reforestation work. I heard of no contractor working on a private contract in Sarawak engaged in voluntary reforestation efforts.

As written by Mr. Lee Hua Seng, head of Sarawak's Forest Department research branch, silvicultural operations in Sarawak remain divorced from logging in that logging is an "economic activity," not a silvicultural one. After experimenting with various silvicultural treatments in Sarawak's mixed Dipterocarp forest, the Forest Department has arrived at one of the simplest strategies available within the State's selective logging system. By trying to safeguard the continued viability of the residual stand after logging, the Department is counting on natural regeneration alone to sustain the forest environment and support projected future log harvests. The Department's difficulty, according to Mr. Lee, is in getting enough staff and other resources to enforce existing regulations for tree selection and design of skid trails and roads.



Remaining stump

In the evening, after returning from the logging site and collapsing in exhaustion for a while, Philip put his day's tape on the recreation hall video player. Within minutes, the hall filled with spectators eager to see the camp's everyday life crystalized in realer-than-real images. The women in the audience were particularly fascinated. Asking around, I learned that although they send the men off in the morning and greet them when they come home each afternoon, virtually none of the women had ever actually been to the felling sites. A few mentioned that when the camp was new they would often hear or feel the crash of the large trees in the distance, now the blocks being logged were too far away to hear anything. As the tractor groaned and chainsaw buzzed on the tape, there was a rising murmur of questions asked and answered between the women and loggers in the audience.

There are about 200 workers at the Teleng operation. They include Chinese from Sibu and Ibans from the areas below Kapit, on the Rajang, and men from Kenyah and Kayan longhouses near Belaga town and above Bakun rapids on the Balui and its tributaries. When we arrived at the camp, several groups of these upriver people were waiting out the flood with friends

and relatives at the logging camp, along with one of the current batch of foreign anthropologists working in ulu Balui.

The pecking order at the logging camp appears to be divided largely on ethnic lines. The management is Chinese, as are most of the tractor drivers and other heavy machine operators. Chainsaw operators are mostly Dayak (Iban, Kenyah, and Kayan), and the less skilled workers were also generally Dayak. There were only a few Malays working at the camp when I was there; Sarawak's Malay population has little tradition of working far inland, and other workers thought that Moslems would have a hard time with the camp's pork-laden diet. While many Malay politicians hold timber concessions, Malays are largely absent from the actual work force in the forestry sector, though many of the State's forest officers are Malay.

Most of the loggers live at the riverside camp, but two smaller camps have been established closer to the more distant logging sites to reduce travel time. Some workers have also set up households with their families at various other points along the logging roads that have been built since 1983, like those we met near the head of the skid trail. There is compensation for this isolation in the accessibility of rivers still good for fishing, above the logging sites, and the chance to gather jungle products pulled down in the logging, including some fine rattan that can be sold.

Pay rates for loggers are more or less standard within any region in Sarawak. The most highly skilled workers, the tractor drivers and chainsaw operators, each get M\$ 5 per ton for most of the species they cut. The assistants' wages vary, but M\$ 2 to M\$ 3 per ton seems common. At Teleng, logging truck drivers do particularly well, at M\$ 2.50 per ton to move logs from the skid trail head to the riverside camp in trucks that carry about 15 tons per trip. Log de-barkers and others in the non-mechanized operations of the logging process generally have the lowest pay.

When weather permits, the loggers work a seven-day week and are on the job during virtually all daylight, non-rainy hours. Injuries are frequent, and although the government mandates workers' compensation, it is often a long time coming, and many people fail to collect the full amount due to lack of legal assistance. Loggers at Teleng get six days' leave every two months, and two months of the year off.

Managers' pay at logging camps in the Belaga district also varied widely. At virtually all the camps I asked about, a large portion of the management's pay comes in the form of bonuses or production commissions. Some of the smaller contractors might be owner-managers. Managers often are related to owners; others invest in the companies that employ them. Managers of the larger camps have immense responsibility, overseeing multimillion dollar equipment and facilities, and having significant control over the daily lives and safety of hundreds of workers and their families. If managers are not satisfied with their earnings from a particular position, those with good production records have much of Southeast Asia in which to go job-hunting.

Trying to find out who actually owns Teleng, or the company that holds the forest concession Teleng has been contracted to work, is a bit tricky. Direct questions didn't get me very far. In 1985, some muckraking investigators calling themselves the "Sarawak Study Group" put together several sets of legally available registrations and found that the Taucanet company had a shareholder investment of less than M\$8,000. But the five entities owning shares in Taucanet include some of Sarawak's major politicians, including a former State Secretary and senior members of Sarawak's ruling party. The real investor in logging the Taucanet concession is the Teleng company. My very unexpert guess, based on just the parts of the operation I saw in a few days, puts the investment of the Teleng company at well over M\$ 7 million in equipment alone. Logging equipment is not cheap.

The labyrinthine movement of investment funds in Sarawak logging, I have been told, leads ultimately to the same Japanese trading houses that buy over half of Sarawak's timber exports. (Investments and timber movements are monitored by the quasi-State Sarawak Timber Industry Development Corporation.) I don't know who owns Teleng, but the understanding at the camp is that its largest shareholder is the publisher of Sarawak's generally pro-government English newspaper, The Borneo Post.

Much of the "open secrecy" surrounding ownership and investment in Sarawak's forestry sector has to do with the fact that timber concessions tend to be political perks, with allocation ultimately controlled by the Forestry Minister, always one of the ruling party's key portfolios. Forest concession applications may be made through any of Sarawak's Division Forest Offices; any uncultivated land not held under title or recognized by the State as customary rights land may be subject to licenses to take forest produce, except for land in constituted or proposed national parks, forest reserves, and a few other minor designations.

The standard arrangement is for Malay or Dayak individuals or majority-owned firms to use their political influence to apply for timber concessions, which are not subject to competitive bid, and then to contract with an ethnic Chinese-owned company to make whatever investments are necessary to actually cut the wood and move it out. The concession holder pays a royalty to the State on forest produce taken from the concession area. However, precise arrangements between concession holders and logging contractors are not usually disclosed; only the contractor's or subcontractor's identity needs to be registered with the State, and not specific transactions between the contractor and the concession holder or shareholders in the concession holding company.

The system is so much accepted in Sarawak that the embarrassment surrounding it seems a bit strange. However, I believe it stems from the fact that concession holders, through their use of political connections, bumiputra (Malay or Dayak) ethnic identity, and perhaps a purse of some "secret ingredient," can make enormous amounts of money without risking any material investment whatsoever in the logging operation.

The formal commercial sector in Sarawak is driven by logging. A quick count of Yellow Pages listings for timber contractors and sawmill companies alone found over 175 contractors and over 90 sawmill companies,

most of them operating in several locations around Sarawak. Logging and service to the timber industry have become a way of life for an increasing number of Sarawakians over the past decade, during the rapid intensification and expansion of forest exploitation. Various estimates put employment in timber-based trades, including logging, transportation, and processing, at almost 100,000 people out of a total State population of just under 1.5 million.

Sarawak's total 1985 timber production amounted to over 12 million cubic meters of sawlogs and almost 15 thousand cubic meters of hewn timbers. Most of the logs and much of the timber were exported, at a total value of over M\$ 1.5 billion. Forest-based revenues, including royalties, fees, and duties, are the largest source of funds for the State government, at over M\$ 300 million in 1985. (The Malaysian Federal government stays out of Sarawak forestry matters, based on the agreement that was deemed essential to get Sarawak to join the Malaysian Federation when Sarawak got independence from Britain in 1963.)



Logging families at the Teleng site

Timber royalties to the State are calculated according to the species of wood extracted and the region it is taken from; a ten percent duty is tacked on all log exports. The State assesses royalty bills based on detailed grading procedures paid for by the licensee but overseen by the Sarawak Timber Industries Development Corporation.

Two special assessments on logging fund projects ^{are} meant to benefit native communities. A Native Premium Timber Cess on logging of hill forest outside of the Permanent Forest Estate goes to the Sarawak Foundation Fund. Proceeds of the fund have tended to go to largish government projects, and the Foundation is generally seen as simply another arm of the State bureaucracy.

A new levy on concession logging now goes to the Forest Concession Area Rehabilitation and Development Fund, established in 1985. The new fund is meant to pay for projects to improve the social and economic welfare of communities adversely affected by logging. The fund's short history has embodied much of the tension between traditional political control and centralization of everything having to do with Sarawak logging and the determination of newly organizing groups of orang ulu (rural Dayak communities) to receive compensation for unwelcome impacts of logging. Locally-based projects are supposed to alleviate hardship caused by new restrictions on shifting cultivation due to the extension of the Permanent Forest Estate (which can be logged but not farmed), muddied water supplies, and reduced chances of bagging game or catching fish due to logging-caused changes in forest and aquatic habitats.

The fund is new enough that no one can really predict its impact. Membership of the fund's board is meant to balance opposing political forces, and project-by-project decisions would be locally made. While there is a consensus that projects supported will be truly useful and locally desirable, it is also generally assumed that power plays in local political leadership will control priorities in project funding. (Sarawakians chuckled when I mentioned that in America such a set-up is called "log rolling.")

There is obviously a great deal more to be said about timber in Sarawak, particularly about some of the botanical ecological, and silvicultural research being carried out by the Forest Department. Claims and counterclaims about the extent of environmental and social impacts of logging have become headline news. Findings of ecologists, anthropologists, and a host of other expert researchers have been scrutinized and heeded (or conveniently disregarded) much like the warning calls of an aviary full of Borneo's omen birds.

Barring a massive ecological disaster in human terms, an unanticipated lucrative source of cash for Sarawak's growing population, or a revolutionary change of heart on the part of Sarawak's political leadership, the State's forests will continue to support intensive logging for at least the next few years. Expedient-minded conservationists, both within and outside the State government, are working to ensure that viable areas of jungle will be protected from logging. Others are demanding closer regulation of logging activities. Politically acceptable opponents of boom-style logging, especially in areas that have not yet been subject to commercial logging, are mainly saying "Log, but look and think before you cut. Don't be greedy; give us a share of the profits. And remember, we will depend on this forest for our needs long after you loggers have left."

In the meantime, the boom goes on.

Sincerely yours,



Received in Hanover 7/27/87