

INSTITUTE OF CURRENT WORLD AFFAIRS

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Peter Bird Martin  
Executive Director  
Institute of Current World Affairs  
4 West Wheelock Street  
Hanover, NH 03755 USA

Dear Peter and Friends,

Government planners in East Kalimantan see development of industrial timber plantations as a long term insurance policy for the province's economic and environmental future. By the year 2000, they expect that work will have begun on "rehabilitating" up to 10,000 of the 36,000 square kilometers of lowland forest devastated in the 1982-1983 forest fires.

Optimists hope that forestry in East Kalimantan will progress from simply exploiting millennia of accumulated jungle wealth to nurturing a renewable but sensitive forest resource. Planting trees is aimed not just at restoring the forest, but also at safeguarding future life and prosperity for Kalimantan's people. Systematic management of natural forests and highly productive timber plantations will provide jobs and raw materials for wood-hungry industries long into the future. Foresters and industrial development planners hope that initial land clearing for the plantations, planting, caring for trees, and eventually harvesting them will employ as many people as logging does now, and provide the nation with precious foreign exchange to balance off unsteady petroleum revenues.

Many foresters and environmentalists, long aggravated at the Forestry Department's hesitation to enforce replanting requirements for logging companies, have greeted the new emphasis on tree planting with a sense of triumph. The industrial timber plantation schemes, at least on paper, put Indonesia in the forefront of Asian tropical silviculture. Regional planners in East Kalimantan have breathed a sigh of relief that the forestry bureaucracy has come up with its own program to develop much of the burned area in an economically profitable way.

Management of the plantations embodies many decisions that go far beyond the decision to plant trees. What should be planted? How and when? Who should do the work, and what should they receive for it? How can the development of industrial timber plantations (hutan tanaman industri, or HTI) be oriented toward providing the greatest benefits for people in the region, immediately surrounding plantations, and should that be an issue in project planning?

A recent trip to the Long Nah plantation being developed by government-owned company P.T. Inhutani I highlighted many of these issues. As a

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Judith Mayer is an Institute Fellow studying environmental protection, conservation, and sustainable development issues in Southeast Asia.

quasi-state operation with direct oversight by the Forestry Department, practices and priorities there may best reflect government policy on management of timber plantations.

HTI managers were in a reflective mood when I was there. Pak Suhartono, the forestry engineer who manages the project, was evaluating progress at the site during 1988 and finalizing a 1989 work plan. An inspection team from the Forestry Department in Jakarta was also reviewing the project. Under a new policy of stricter regulatory enforcement, the Forestry Minister has ordered frequent inspections at all HTI that are receiving Replanting Guarantee Fund money. Inhutani managers felt a bit under the gun to meet land clearing and planting targets, and were ready with reasons when they failed.

Site work for the Long Nah HTI began in 1984, only a year after the forest fires had died out. The Inhutani HTI area had been selectively logged by a contractor before the fires, and 50,000 hectares of Inhutani's original 62,000 hectare logging concession were to be replanted over a 25 year period, 2000 to 3000 hectares per year. Some 12,000 hectares of the original concession have been redesignated as agricultural land in a 6-kilometer-wide band along the west bank of the Kelinjau River, the previous border of the concession. Since 1977 the area has been settled mainly by Kenyah people moving down from the Apo Kayan (the plateau along East Kalimantan's border with Sarawak) as part of a government-backed resettlement scheme. The policy was promoted to provide natives of extremely isolated and strategically sensitive areas with better access to markets and government services. The land has since been used for traditional rice and garden crop cultivation.

The Inhutani HTI at Long Nah has been plagued by problems since the state company took over direct control of the site from its contractors in 1984. At the progress evaluation meetings I attended, the "bottom line" was meeting annual planting targets and schedules. Whether the trees planted survived did not seem to be as pressing an issue. Managers fear a short term paper loss on planting costs higher than payments from replanting fund reimbursements. But overhead investments in the Long Nah site have barely covered basic necessities of the tree planting operation, such as new vehicles and earth moving equipment to replace hopelessly broken-down ones. This has led to dangerous and impassable roads on the site and long, costly delays in moving people, equipment, and seedlings between far-flung work areas. Suhartono assured his staff that a new tractor and grader had been purchased and would be shipped to Long Nah soon, the project's 4-wheel-drive cars would be fixed (none of three were working when I arrived) and something would be figured out to move workers around the site in a timely manner...

Several of the more junior managers seemed as concerned about "people" issues as about meeting planting targets. The issue of late wages for workers came up, but was quickly brushed aside. The issue of where, when, and how local people would be allowed to use land within the HTI boundaries was also dealt with quickly. Since the company was planning to reclear much of the concession anyway, Suhartono had no objections to nearby villagers using small areas for short-term crops, but wanted to make sure that villagers farming on concession land registered locations of all plantings with the company.

Traveling through the HTI on roads originally graded for logging over a decade ago, I wondered about the need to clear the land completely for commercial tree planting. Healthy "pioneer" trees are already growing well, sunlight-demanding species that naturally dominate the post-fire scrub forest already over 10 meters high. Though most of these trees will stop growing after 10 to 15 years, their wood can be almost as useful as the Eucalyptus and Acacia mangium trees Inhutani is now planting for chips and pulp. (These trees are not expected to produce high-quality logs.) Why didn't Inhutani managers choose an easier and cheaper option than total land clearing and planting from scratch? Encouraging the growth of the most desirable natural pioneer trees by clearing other scrub around them could also produce an abundant pulp or chipwood crop, and would eliminate the need for wholesale clearing of the existing 6-year-old forest. Total land clearing is an expensive and dangerous labor-intensive process. Workers must hack down medium-size plants (up to 20 centimeters in diameter), fell larger trees with chainsaws, and burn the debris-filled area. Why had Inhutani chosen to plant non-native species rather than to take advantage of a 6-year head start in encouraging the growth of selected existing trees?

Inhutani's management never seriously considered such an option in their original planning. In deciding on a rehabilitation strategy for their HTI concession in 1984, when the smoke from the recent forest fires had barely cleared, no one had any idea what would grow naturally and survive on the devastated land. No fire was equivalent to this one in the scope of its devastation to an Asian tropical rain forest. Trying to make predictions based on patterns observed after smaller fires or in abandoned Borneo swidden fields was useless. The small burned farm plots are easily reseeded by surrounding natural forest, but little mature natural forest had survived in or near Inhutani's huge burned concession area. Promoting the growth of naturally-occurring commercial log species had been studied on a few old swidden fields in Sarawak, but no one had ever seriously looked at nurturing less valuable pioneer species for chips or pulp on the burned and recovering land.

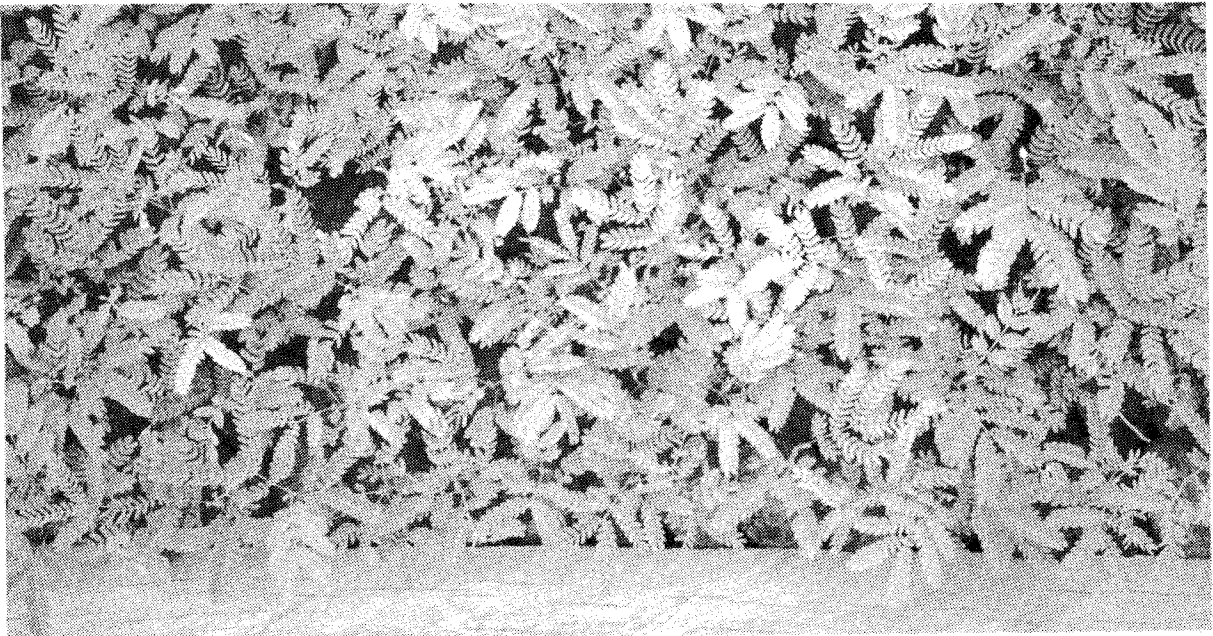
Another reason the more "natural" option had not been seriously considered in Inhutani's original plans was administrative. The planting would be largely financed from the replanting guarantee fund (dana jaminan reboisasi, or DJR). Regulations for payment from the fund covered either enrichment planting (adding trees) in relatively healthy selectively logged forest or total land clearing and uniform planting of designated blocks of degraded land as HTI. There were no clear standards for DJR reimbursement based on other patterns. So many administrative obstacles already delayed DJR payments that few company planners hoping for smooth operations and cash flow would risk a rehabilitation proposal so different from the standard models for which the system was designed.

There has been some tension over the decision to clearcut, reburn, and plant low quality wood species on so much land at Inhutani. Since 1984, the desire to ensure safe, rapid return on investments had justified planting extensive areas of Acacia mangium and Eucalyptus, virtually the only trees planted on a "production" basis until now. But in the long term, Inhutani hopes to produce a crop of the valuable native hardwood species that now support Borneo's logging industry -- meranti, kapur, keruing, and a few others. The technology for cultivating these rainforest trees is far from proven, however. These species' require-

ments for light and shade, soil chemistry and symbiosis with micro-organisms in the soil are only beginning to be understood.

Now, 5 years into the development of the Long Nah HTI, a new nursery project signals the start of a serious commitment for forest rehabilitation with native hardwoods. This is not the small experimental meranti nursery, but a production nursery for almost a million fast-growing Albizia seedlings, now standing up to shin-high in tiny soil-filled plastic bags. These feathery-leaf trees will be planted to shade Dipterocarpus seedlings when they are young and vulnerable to dry soils and burn-out from too much sunlight. When the Albizia trees are about 2 years old, the Dipterocarp seedlings will be interplanted with them. At 10 years, the Albizia trees can be cut for chips or pulp, and their removal will give the more valuable trees additional light (necessary by this time) and growing space. Harvesting the hardwoods could begin as early as 30 years after they are planted. If early trials succeed, Inhutani plans to plant up to half of its HTI with the Albizia-Dipterocarp combinations.

More good news is that Inhutani will try planting some Albizia on land which has not been completely cleared and burned, but from which undergrowth has been cleaned out and charred tree trunks have been chopped down. It's not clear how well this will work, but in Kalimantan's silviculture world, this plan is considered ambitious, if not daring. And it provides a certain assurance that even failed attempts to plant native species will not be a complete loss for the company. Inhutani will still receive the basic DJR reimbursement for just planting the Albizia, plus money made from processing and selling the chipwood crop. Several companies interested in significant long term investments in Silviculture are beginning to experiment planting native Borneo hardwoods in their HTI concessions. In addition to the ecological benefits of recreating something akin to the original forest of the area, these companies are also ensuring their own future profits. Tropical hardwood prices are likely to skyrocket over the next thirty years as the



Young plants in the Albizia nursery.

world's equatorial rainforests are rapidly depleted. But in addition to the technical problems of cultivating these species, these companies are assuming that their forest concessions will be renewed for long enough to allow them to realize returns on their tree planting investments -- certainly longer than the current 20-year concession period, which hardly encourages long term land management or tree planting.

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The question of who will benefit from the major tree planting efforts now being launched in East Kalimantan has only recently become a major concern, as HTI projects have begun to employ large numbers of workers, often in areas with sparse populations. Regional plans portray the HTI as regional development projects, and anticipate social and economic benefits beyond the supply of raw materials for downriver wood processing industries. The prospect of jobs for local people, markets for their products, and the extension of basic infrastructure, especially roads, into Kalimantan's interior raised the hope that timber plantations will be the forestry sector's key to sustained regional economic development in ways that the logging industry has failed.

Based on conditions at Inhutani's Long Nah project, what are the prospects that such plantations will have a strong positive influence on human as well as environmental welfare in the surrounding area? If there are costs in human terms, what are they?

Up to 500 people at a time work on Inhutani's HTI at Long Nah. Most of these workers are employed on a borongan basis -- hired and paid by a subcontractor (or a sub-sub contractor) who receives a lump sum from Inhutani when his workers complete a designated task. Workers' stake in the project is short-term. Most of these contracts are for tasks taking only 2 or 3 months. There may be long and unpredictable gaps between contracts, and payment on completion is often slow. The borongan system simplifies Inhutani's personnel relations, since permanent supervisors and managers do not have to deal directly with individual field workers, but only with their crew bosses (pemborong). The distribution of wages and division of work is up to the pemborong, and the faster jobs are finished, in theory, the more workers can earn.

Complaints about the quality or pace of work on one hand or about working conditions on the other hand go through the pemborong, insulating company managers from labor disputes. A few of the field workers doing the most closely supervised work, such as hauling plants to planting sites and taking care of plants in the nursery, get a guaranteed daily wage directly from Inhutani. Men get Rp. 2500 per day (US \$1.50), considerably less than what many men hope to earn on a less certain borongan basis, usually for more dangerous and uncertain work. The nursery workers -- women with male supervisors -- get only Rp. 2000 per day (US \$1.15). Many complain that this is barely enough to feed themselves from the store at the nursery site, 23 kilometers from the base camp by the Kelinjau River. The store, run privately on a concession basis from Inhutani, supplies basics such as rice, soap, and cigarettes on credit at outrageous prices. Bills are settled when wages come through each month. The vicious cycle of debt many workers get into this way is a ubiquitous element of the system. Workers farthest from their homes, especially migrants from distant areas such as Java, seem to get caught most cruelly in the debt trap.

About a third of the Inhutani workers come from Java; another third come from downriver areas of Kalimantan and Sulawesi. Less than a third of the workers come from nearby areas where it is convenient for them to return home more than a couple of times per year. Inhutani managers estimate that only 5 percent of the HTI workers are Dayak people from nearby villages, a situation which calls into question the state company's role in fostering economic development in the immediate vicinity of the project.

Inhutani managers and supervisors cite many reasons why there are so few Dayak workers at the project. Some speculate that perhaps the pay is not high enough to attract Dayak workers, who can easily find out about better paid work if they are willing to leave the area. Others explain that Dayak crews rarely stay with a land clearing job from start to finish, and that during land clearing and harvesting seasons for shifting cultivation, they disappear to work on their own rice fields, delaying HTI schedules. Planting managers complain that Dayak workers refuse to dig holes and loosen soil with hoes rather than just poking holes to plant trees with sticks, as they would in their swidden fields. HTI managers bemoan the lack of reliable workers, yet rarely have actively recruited workers in the area.

Visits to the villages nearest the Inhutani project brought forth other explanations for the lack of Dayak workers at the HTI. When the project began, villagers eager to earn cash wages flocked to Long Nah. In 1984 and 1985, most of the young unmarried women from Gemar Baru village, an hour's walk from the Long Nah base camp, worked in the nursery (between 50 and 100 people). Despite wages somewhat lower than at most timber or mining concerns in East Kalimantan, the HTI was the first place many young men from local villages looked for work. But the Dayak workers seemed to expect more from the HTI than just a regular wage. They hoped for the company to adhere to what they saw as a responsible, even moral approach to the welfare of workers and neighboring communities.

Generally deteriorating relationships between Inhutani's management and local workers were aggravated by two major incidents. In 1985, one of the young nursery workers from Gemar Baru got pregnant while she was living at the HTI camp, and had a child. The father, a migrant worker at the camp, refused to marry her, and ran off. The birth struck a nerve in Gemar Baru, a close-knit Kenyah community dominated by evangelical Christians. Stories abounded about other affairs between Gemar women and camp men, voluntary or subtly coerced. Village elders demanded that camp managers take some action to "protect" teenage girls living at the camp in the future. Managers responded that they could not be held responsible for the propriety of life at the camp. In most parts of the world, this would hardly be an outrageous statement. But in Indonesia, where paternalistic management is the expected norm, the attitude was cause for concern. The village head from Gemar Baru, reacting to a sense of breach of trust, called all of the Gemar women home. No more than 5 Gemar Baru women at a time have worked at the camp since then, all pending permission by the village head, who must sign "walking papers" for anyone wishing to live outside the village for an extended period.

A second incident was the "last straw" as far as workers from several surrounding villages were concerned. In 1986, Pak Pejating, a chainsaw operator from Gemar Baru, was killed by a falling tree on a land

clearing job at the HTI. (Three men have died in falling wood accidents at the site since 1984, and there are a couple of serious mishaps at the site each month.) Everyone is aware that clearing the burnt and rotting trees left over from the forest fires is dangerous work, as trees fall unpredictably. Pejating's wife and work crew buddies demanded some form of compensation from the company to support his children. But the company pointed out that when workers started at the Inhutani HTI, their pemborong should have told them that the company would pay no compensation in case of accidents. According to several pemborong, all pemborong had to sign agreements releasing Inhutani from liability for accidents to their crews (I was not able to substantiate this with Inhutani managers). Liability for such accidents would, in principle, be transferred to the pemborong, who operate on an informal basis, or to the legally constituted umbrella company that holds written contracts with Inhutani for some labor services.

In Pak Pejating's case, the pemborong (incidentally, also a Gemar Baru man) also denied responsibility. After negotiations failed, no one knew of any way to compel anyone to pay compensation, and this helplessness turned to anger. Although Pejating's widow received a small "sympathy gift" from Inhutani, managers made it clear that they did not consider this compensation, and warned that none would be paid in the future for pemborong workers. All of the men from Gemar Baru walked off the job, along with some Dayak workers from other villages. Until now, none of these Gemar men have returned to work at the HTI. This move was never called a strike, a dirty word in Indonesia. The company simply hired new borongan workers elsewhere.

Inhutani workers had frequently asked that the company provide them with accident insurance such as that offered by ASTEK, the government's social insurance company. All Indonesian companies employing over 25 workers or paying over a million rupiah per month in wages are legally obliged to insure workers. But, of course, most of the field workers at Inhutani are officially employed by contractors or subcontractors rather than directly by Inhutani, and most of the pemborong employ just under this number at any one time, and claim that they are exempt from this requirement because of their small number of workers and the short-term nature of each job. Several pemborong have asked that, for purposes of insurance, the company cover workers directly since the administrative burden of form-filling, premium payments, and claim filing are beyond the capacity of the pemborong. So far, Inhutani has dragged its feet on this. Managers have not refused outright to begin insuring borongan workers, but have yet to take the necessary steps. Perhaps the insurance issue weighed heavily in people's minds when I was in the Long Nah area because Inhutani's permanent managers and supervisors there had finally been enrolled for ASTEK coverage only the month before. The news that no borongan workers were included in the policy may have added insult to injury.

Workers' insurance and accident compensation have come up so often in my visits to forestry sector work sites, and people's understanding of workers' rights and companies' legal responsibilities in case of an accident are so divergent that I finally asked the regional ASTEK agent in Samarinda about ASTEK requirements. I learned that ASTEK is just starting to get inquiries about registering HTI employees, but that only 4 East Kalimantan companies involved in this extremely dangerous work



have taken serious steps to insure any of their workers. While Indonesia's labor laws on issues of workers' compensation in case of accidents are specifically designed to meet the International Labor Organization's minimum standards, the government has yet to enforce many of these existing regulations in East Kalimantan's forest industries.

Since the 1986 walkout by Dayak workers, a few new Dayak workers have been hired, but in general relations between Inhutani management and surrounding communities have continued to deteriorate. The company has had better luck with ethnic Kutai workers from further downriver, from communities with less intimate relationships to Inhutani at Long Nah. And as workers have come from further afield, Inhutani seems to have shown less and less willingness to assist nearby villages.

In the beginning of HTI development, the company maintained a track between its camp and several villages. The track was used by school children traveling between villages to attend classes (including kids from Inhutani's own base camp, who must walk to the main part of Long Nah to go to school), by women selling their farm produce and shopping at the provisions stores that have sprung up around the camp, and by workers coming to and from their job sites. Over the last couple of years, Inhutani has refused to use its heavy equipment to maintain this track or help with other small village projects. Inhutani's managers explain that none of their broken-down machines can be spared for work not essential to Inhutani's own operations. But village leaders see Inhutani's refusal to help with their development projects as an insult to the local population, and a failure to fulfill the commitment to support development in the surrounding area, part of all forest concession agreements with the Indonesian government. Teachers at the Long Nah school also point out that because of the miserable condition of the track, few of the children living at the base camp attend school regularly, and workers coming down from their job sites to collect wages and stock up on supplies find little in the way of fresh food at the Long Nah shops.



Inhutani workers on their way to a job site at Long Nah HTI.



It seems that if one is to look for immediate benefits from the HTI with regard to local population or development, the definition of "local" must be broad enough to include most of the Mahakam River basin down to Samarinda. Even the new camat (subdistrict officer) in Muara Ancalong, two hours down from Long Nah by motorized longboat, is perplexed by the lack of more positive spin-offs from Inhutani's presence in his jurisdiction.

So if the people in the immediate vicinity of the HTI are gaining little, at this point, from Inhutani, who is benefiting, and how? At this point, long before any of the trees planted are ready for harvesting, the main benefits appear to be the 400 to 500 people with jobs on the project. While total wages vary seasonally, over Rp. 20 million per month in wages alone from the project are nothing to sneeze at. Though much of the work is low paid and dangerous, these jobs are acceptable ways to make a living for those workers able to stay with them. But the personal price many of them pay for working at the HTI is high. Many of the migrant workers from distant places, never quite able to save enough money to return home proudly, stay away for years, often becoming depressed and homesick. (This seemed to be especially common among the Javanese men who had left wives and children at home. Of course, there were also those who had escaped miserable home situations by coming to Kalimantan.)

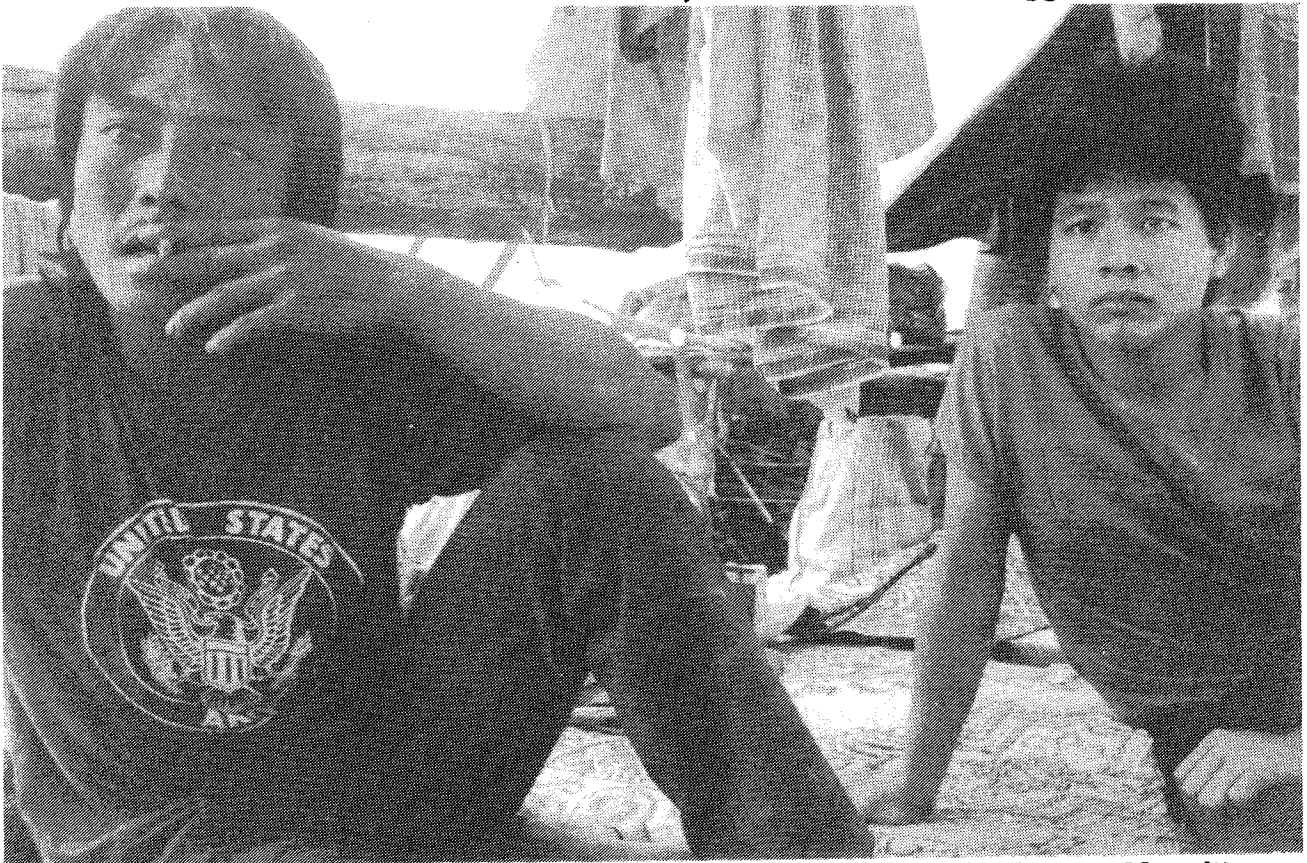
Workers' health also suffers. Staff at the subdistrict clinic estimate that whereas about 10 percent of the population in the Long Nah vicinity have had malaria, an endemic disease, at the Inhutani site over 80 percent of the workers have suffered from acute or chronic forms. Health staff have found that virtually all of the workers from outside Kalimantan get malaria within a few months of arriving at Inhutani. For a while there was a paramedic at the Inhutani camp, but the company did not keep him supplied with medications. He eventually gave up and left. Now, people having acute malaria attacks or suffering from other serious ailments must travel to Muara Ancalong's clinic or to the paramedic at Gemar Baru for treatment. Clinic staff visit the Inhutani camp only once per month. They often feel at a loss to alleviate the high levels of chronic illness there caused by basically unhealthy living conditions for field workers. About 20 percent of the Inhutani workers treated for Malaria also have typhus, and 2 percent get hepatitis B. These draining combinations of chronic diseases can be fatal. While the company pays treatment expenses for its direct employees and pemborong are supposed to take care of their own work crews, by the time victims succumb to the malaria/typhus complex, many of them have long been too weak to work and have left the site. While the number of deaths from diseases contracted at the Long Nah site is difficult to trace, workers are becoming increasingly aware of the grave health risks they run. (Incidentally, many of the most serious health problems seem to be less severe among workers who can return home easily until they can recover. Among those from far away, especially the Javanese, lack of proper care is often aggravated by continuous hard work and crude shelter in lean-tos and shacks.

Last year, a new health complaint arose among workers living at job sites where Inhutani was experimenting with agricultural chemicals, including pesticides and herbicides. Since workers living in many field locations are provided with no alternative water supply, cooking and drinking water comes from runoff contaminated with these chemicals.

Workers where chemicals were being used began complaining of headaches and stomach problems above and beyond malaria and typhus, and began searching for signs of poisoning in buddies who had died. An anonymous letter accusing Inhutani of irresponsible practices was sent to the governor's environmental office, creating enough commotion that an investigative team was sent to Long Nah last August. Results of the investigation were inconclusive, and the issue has been dismissed by both the company and the government for the time being. But as long as Inhutani tries to eliminate insects, fungus, and the aggressive climbers strangling thousands of young HTI trees, herbicide runoff side effects are sure to come up again, especially if no alternative water supply is provided to field workers. As more area is planted and trees must be protected from pests with manual labor and/or chemicals, workers may be exposed to increasing levels of chemicals. (Ironically, malaria, typhus, and chemical side effects are not considered work related illnesses in Indonesian labor law.)

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With all of these criticisms of the HTI project, I am not saying that such projects cannot contribute to meaningful local development. In fact, I believe that forest plantations may be among the most promising uses of the more remote areas burned in the early 1980s fires. But ensuring the greatest benefits to local populations requires deliberate planning with that aim as a priority. I have asked people around Long Nah and elsewhere in Kalimantan how they hope timber plantations could benefit them, and how such projects could be designed or changed to best serve the needs of people around them as well as the regreening of the land. Based on what I heard, here are a few suggestions:



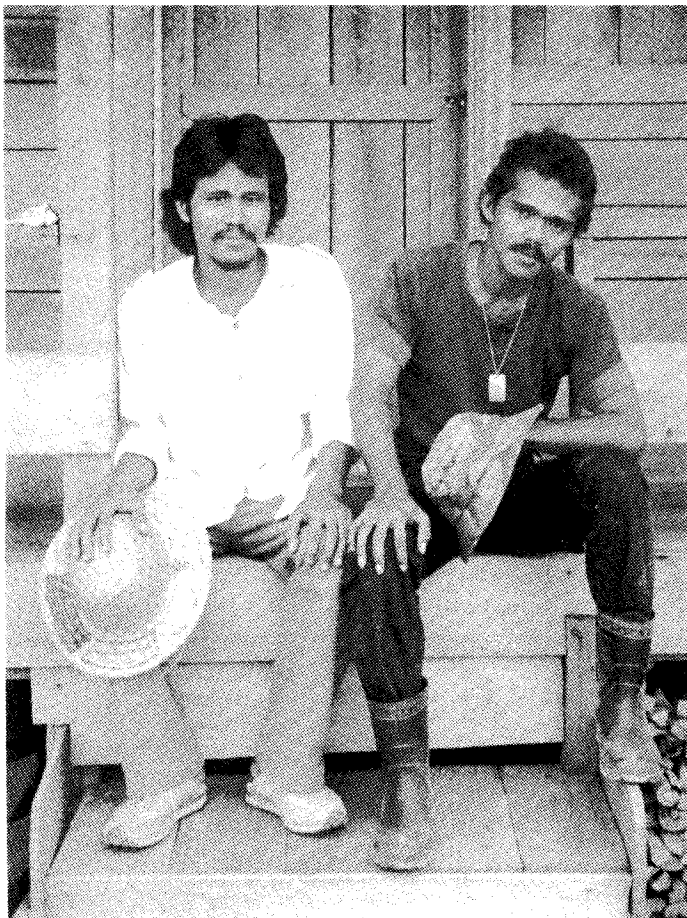
"Juh," head of a Dayak land clearing crew, has had several close calls. His concern about safety was echoed by many other workers at Long Nah.

- Timber plantations should employ as many workers as possible from the immediate vicinity of the project. Work schedules should allow for a variety of seasonal work possibilities. Plantation management should make an effort to use their special capabilities (e.g., earth moving equipment) to assist villages with small projects designed to improve local standards of living.
- Measures should be taken so local people have a direct long term interest in the success of the project. Local people should be given priority in paid work to maintain planted areas (e.g., weeding; pruning; other pest elimination). As an incentive, workers and families caring for a designated area from planting to harvest could be given a share in the profits on timber eventually cut from their area.
- Part of the HTI area should be set aside for growing timber for local use. This area could be maintained by local people under various arrangements with the company. Special use timber species like Borneo ironwood and even several kinds of fruit trees with high quality timber could be planted on some of this land. Local people should be allowed to take small quantities of wood, roofing leaves, and other forest products from the land that will be cleared and replanted in the future. When land clearing schedules allow, one season of hill padi could be planted along with the HTI trees. In return, shifting cultivators using the land could weed both the padi and the trees for a season.
- Protecting worker safety and health should be a priority in developing HTI projects. Sturdy shelters, safe water supplies, malaria prevention measures, and prompt access to medical care should be guaranteed to all workers.
- HTI companies should not use the borongan (subcontracting) system to avoid accepting direct responsibility for worker safety and health. All workers, whether employed directly by the company or by subcontractors should have workers' insurance guaranteed by the HTI company itself.
- At present, many HTI projects employ mainly short term migrants. Opportunities should be provided for more permanent workers, including migrants, to support themselves with HTI work. Some way for workers to have a share in HTI profits could be explored.
- Long term plans for HTI should be fully integrated with overall regional development plans and prospects. Opportunities to link HTI and other development projects should be used whenever possible.

A few Kalimantan HTI companies are currently exploring ways in which to incorporate some or all of these features in future projects. The government should encourage such efforts.

*Judith Mayer*

Mbak Siti, 18 years old, arrived in Kalimantan from East Java last year. She met her husband when she was working at a brothel near Long Nah and moved to his lean-to at the HTI last month. She now cooks and washes for the 5 men in her husband's land clearing crew. Siti has not been away from the job site in the 2 months since her marriage, hopes she will not get pregnant, and wonders when she'll get malaria.



Several supervisors at Long Nah have been frustrated by the need to get operational decisions approved by Inhutani and the Forestry Department in Jakarta, which often throws weather-sensitive planting off-schedule. Lower level supervisors have also long demanded better working conditions and proper shelter for field workers, but improvements have been slow in coming.