

**Forests, Fires and
Confrontation in Indonesia**

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Abstract

Decades of mismanagement and plunder of Indonesia's forests have resulted in rapid deforestation and escalating levels of conflict and violence between local resource users and external actors from government and the private sector. Destructive forest policies during the Suharto regime (1966–1998) weighed heavily on the local and indigenous communities, as unsustainable long-term logging concessions barred access to the resources upon which they depended. With the regime change in mid 1998, the State has lost its ability to forcefully suppress the increasing number of forest-related conflicts, many of which are related to illegal logging activities. Because traditional conflict resolution mechanisms withered during the Suharto regime and new mechanisms were not established, these conflicts are now becoming an internal security threat for Indonesia. This has weakened the State's capacity to reform forest policy just when—for the first time in three decades—real reform has become possible. Addressing the country's problems will involve restructuring the legal system, developing alternate dispute resolution institutions, and strengthening the capacity and integrity of local governments. International organizations can contribute to this process by identifying, combating and reducing corrupt government practices.

Note: This chapter reports on the situation in Indonesia through the end of 2001. Despite a change of administration in the Indonesian government since the writing of this document, the trends noted have not changed substantially—if anything, they have only worsened.

1. Introduction

Indonesia possesses the last remaining large tracts of tropical forest in Asia, and is one of the key global centers of terrestrial biodiversity. These forests are also very important to the national economy and to the livelihoods of millions of forest-dependent local people across the country. Rapid deforestation and forest mismanagement in Indonesia have long been of concern to the international conservation community—Indonesia's forests can fairly be said to be in crisis. But is Indonesia's forest crisis a "security" concern, either for Indonesia or for the rest of the world, on par with traditional security concerns such as preventing war, maintaining domestic peace and order, coping with natural disasters, or avoiding economic collapse?

This paper argues that forests are indeed a security issue for Indonesia, providing evidence for the following arguments:

- Most of Indonesia's land area is legally designated as forestland, and the many natural resources of this vast area are an important economic resource for national and local economies.
- Ownership and use of forest lands and resources have been contested and conflict-ridden for the past three decades, and the usurpation of longstanding local claims by government and private interests has left a legacy of bitterness and anger in many areas of the country.
- Decades of poor management and forest degradation have set the stage for catastrophic forest fires, particularly in 1997–1998, the effects of which have spread well beyond Indonesia's borders.
- Weak forest management capacity and pervasive corruption have allowed illegal logging to grow into a sophisticated and organized criminal enterprise which now provides more than half of the country's timber supply.
- The collapse of the authoritarian Suharto regime in 1998 has exposed deep and jagged ethnic, religious and regional rifts in Indonesian society. These have exploded in savage communal violence in many parts of the country, and longstanding disputes over forest lands and resources are often a key flashpoint for these outbreaks of violence.
- Mechanisms for the orderly and just resolution of social disputes over forest lands and other resources are weak and unreliable. Traditional dispute resolution mechanisms were suppressed and stunted during the Suharto years, while the judicial and parliamentary systems fell into disgrace as corrupt rubber stamps for the regime's political and economic interests. Without any legitimate forum in which grievances can be heard, many Indonesians have increasingly turned to violence.

- In the context of the weak and fractious post-Suharto Indonesian state, the crescendo of violent conflicts over forest lands and resources have become a major security issue, not only threatening forest conservation efforts but also influencing core security concerns such as the capacity of the government and the military to maintain civil peace and physical security for Indonesian citizens, and the political future of the current president.

The chapter concludes with an analysis of the policy and institutional reforms—both within and outside the forestry sector—needed to reduce the level of forest-related conflict and thereby strengthen both Indonesia's security and efforts to conserve its forests.

2. How Forest and Security Concerns Are Related in Indonesia

A considerable amount of scholarship and policy discussion has focused on the connections between environmental degradation and security over the past decade.¹¹⁵ Simply put, "there is growing consensus that environmental degradation can and does trigger, amplify or cause conflict and instability, and a growing concern that environmentally induced conflict might increase."¹¹⁶ And conflict, especially violent conflict, is commonly considered to be a threat to security. Thus, the argument goes, preventing and ameliorating natural resource degradation and scarcity can reduce the threat of conflict and thereby enhance security.

This school of thought has many sources: rising concern about environmental degradation; efforts by the traditional security community to redefine its mandate and relevance in the post-Cold War world; a desire in the environmental community to see environmental stresses taken seriously as "hard" issues on par with issues such as arms proliferation, insurgency, and the like. It also has its detractors, however, such as Deudney (1990) who argues that:

First it is analytically misleading to think of environmental degradation as a national security threat, because the traditional focus of national security—interstate violence—has little in common with either environmental problems or solutions. Second, the effort to harness the emotive power of nationalism to help mobilize environmental awareness and action may prove counterproductive by undermining globalist political sensibility. And third, environmental degradation is not very likely to cause interstate wars.¹¹⁷

Indonesia is, however, perhaps one of the best rebuttals of this view: It currently faces a security crisis that is related almost entirely to internal mat-

ters and has little relationship to interstate threats of attack or invasion. Indeed, at first glance, Indonesia would seem to have enough “traditional” security problems to handle—all domestic—without dragging forests or other environmental issues into the fray. Consider the following:

- The fourth most populous country in the world (population about 200 million), Indonesia consists of some 17,000 islands scattered across more than 5,000 km, with a dizzying diversity of cultures, languages, and ways of life.
- For more than three decades (1966–1998), Indonesia was ruled by the authoritarian “New Order” regime of President Suharto. The economy grew impressively during most of that period, the military and bureaucracy grew in strength and influence, and all forms of opposition (democratic, Islamic fundamentalist, separatist) were effectively suppressed.¹¹⁸ The New Order came to an end in mid-1998, however, following the crash of the economy in late-1997 and an accompanying crescendo of popular protest against the widespread corruption and pervasive human rights violations of Suharto’s regime.¹¹⁹
- Following an interregnum under Suharto Vice-President B.J. Habibie, a new president,¹²⁰ Abdurrahman Wahid, came to power in October 1999 after the country’s first democratic election in more than four decades.¹²¹ While praised as a sincere democrat, Wahid’s fractious coalition government—and his mercurial and frequently baffling personal style—have raised serious questions about his capacity to govern, or even to stay in office for his full term.¹²²
- Indonesia’s economy is in tatters, partly as a lingering result of the East Asian financial crisis that began in late 1997, but more fully explained by the tangled web of Suharto-era economic mismanagement, cronyism and corruption that the economic crash revealed. Most of the country’s banks, and many other key economic players, are bankrupt, the value of the Indonesian Rupiah remains low, and employment and inflation are high. Presently, the national economy is being kept afloat on the basis of an IMF-led international bail-out package and oil revenues.
- The centrifugal tendencies inherent in such a large, multi-ethnic archipelagic nation have been unleashed since the demise of the New Order. East Timor—invaded and occupied by Indonesia in 1975—was finally given its independence after a bloody UN-supervised referendum process in mid-1999.¹²³ Long-simmering separatist movements in the resource-rich provinces of Aceh and Papua (formerly called Irian Jaya) have been reinvigorated,¹²⁴ and other provinces (such as oil-rich Riau, in Sumatra) have begun to talk about independence as well.¹²⁵

- Partly in reaction to these separatist movements—but also in response to a more widespread antipathy to the centralized governance of the Suharto era—the government is moving rapidly towards a new system of “regional autonomy.” But the provincial and district governments who will be the beneficiaries of this sweeping decentralization are, for the most part, completely lacking in the capacities needed to govern effectively. Indeed many are still run by entrenched and corrupt holdovers from the Suharto era.¹²⁶
- Ethnic and religious killing, looting, ordinary violent street crime, and savage vigilantism have exploded all over Indonesia since 1998. Moslem-Christian violence in the eastern province of Maluku has taken thousands of lives,¹²⁷ and similar savagery has appeared in parts of Kalimantan and Sulawesi.¹²⁸ As of mid-2000, the government estimated that there were more than 765,000 “internal refugees” fleeing these various conflicts.¹²⁹ Crime rates have soared in the cities, along with brutal “street justice” in which hundreds of suspected street criminals have been beaten and burned to death in the street.¹³⁰ On Java, the lynching (often by beheading) of people suspected of being sorcerers or witches has increased dramatically as well.¹³¹
- The Indonesian military—reeling from revelations about its past human rights atrocities in East Timor, Aceh and elsewhere, and what it sees as its humiliation in “losing” East Timor—appears unable to contain the growing violence.¹³² Indeed, in Maluku, Christian and Moslem troops sent to quell the fighting ended up fighting with the respective factions.¹³³ Similarly, the police—long reviled by most Indonesians as corrupt, brutal and ineffective—are unable or unwilling to stem either the growing crime rate or the vigilantism that has mushroomed in response.¹³⁴
- Corruption, is widely acknowledged to have been pervasive at all levels of government and the private sector during the Suharto era—a 3,000-page mid-2000 report by the State Audit Bureau and independent auditors, for example, clearly identified billions of dollars that went missing during the last five years of Suharto’s presidency.¹³⁵ And the situation has not changed appreciably: The same audit body announced to Parliament in mid-July 2000 that more than \$20 billion of state funds allocated in the 1999–2000 financial year—some 46 per cent of the total—was unaccounted for due to various kinds of “irregularities.”¹³⁶
- The legal system is widely considered to be so corrupt and inefficient that senior officials were, in early 2000, debating “importing” Dutch judges—on the assumption that no honest ones could be found in Indonesia.¹³⁷ The disgrace into which the legal system has fallen has in turn hurt the credibility of the many corruption and human rights investigations into the Suharto era that are underway.

Given this frightening panoply of problems, what relevance do forests have to Indonesia's security? Quite a bit, for a variety of reasons.

A number of studies from around the world have shown that scarcities of renewable resources, in combination with other factors, can trigger civil conflict.¹³⁸ Three factors can produce renewable resource scarcities. First, environmental degradation can reduce the aggregate pool of available resources; for example, forest loss, cropland degradation, or destruction of fish habitat reduces the absolute supply of those resources (supply-induced scarcity). Second, the demand for a resource can increase due to growth in population or per capita resource consumption. Population growth divides a resource among more and more people, which reduces its per capita availability, while rising incomes and industrialization can increase the per capita demand for a resource (demand-induced scarcity). Third, unequal resource distribution concentrates a resource in the hands of a few people and subjects the rest to greater scarcity (structural scarcity).¹³⁹

Scarcity by itself does not necessarily produce conflict. The level of social conflicts provoked by rising scarcity—and the probability that tensions will turn violent—are influenced by the context of state and the society. As in the case of fire the probability of violent conflict over forest resources is a function of the level of conflict *risk* and conflict *hazard*. The risk of conflict rises as the level of resource scarcity and unresolved grievance and tension rises. Drawing an analogy to fire, this is the “fuel load” with the potential to ignite. The hazard of conflict—the probability that latent tensions and grievances over resources will ignite into open conflict—is a function of the volatility of ethnic, religious, political, economic and other tensions and grievances in the area in question, in combination with the level of legitimacy, effectiveness, and accessibility of non-violent dispute resolution mechanisms (or, alternatively, forcible means of suppressing disputes).

In a strong state with effective dispute resolution mechanisms (or effective state capacity to repress grievances) and a diversifying economy in which scarcity of a particular resource becomes relatively less important, resource scarcity and competition need not lead to a great deal of open conflict. This was largely the situation for most of the Suharto era in Indonesia.

But in a country where the state is weak, reliance on the resource is high, and mechanisms to either resolve or repress grievances are not functioning, scarcity is likely to lead to much higher levels of conflict. And where the society is already wracked with numerous ethnic, religious and regional tensions and conflicts, the additional conflicts arising from resource scarcity may interact synergistically, creating a spiral of interlinked and escalating conflict. This is the situation that Indonesia faces today.

Indonesia's legally-defined "forest lands" (*kawasan hutan*) as mapped by the government covered some 144.5 million ha—about 75 per cent of the country's land area, although that number has declined somewhat in recent years. Only about 80–95 million ha (there are no definitive figures) actually possesses tree cover, however, and less than half of which is thought to be primary forest. But these "forest lands" also serve many other functions: the reservoir of land for conversion to food and estate-crop agriculture and timber and pulp plantations; and large areas of mining concessions.

From the perspective of power relations, the official definition of "forest lands"—bearing little resemblance to any ecological definition of "forests"—is a political strategy to assert state hegemony over natural resources, social relations, and political authority across that vast territory.¹⁴⁰ One corollary of this political construction of "Indonesia's forests" has been the marginalization of the interests and claims of the millions of rural people living in or adjacent to state forest lands, including numerous indigenous tribes living more or less traditional lifestyles, small-holder migrant farmers, and people living on government-sponsored "transmigration" resettlement schemes established over the past three decades—people viewed as "backward" and "undeveloped" in the New Order discourse of "development."¹⁴¹ Thus a second corollary of the "political forest" is the need for the area to be "developed" by the forces of modernity—the logging concessions, plantations, mining firms and other large corporate interests under the patronage of the Suharto regime.

Thus, if "forests" are taken to encompass all of the lands administered under the government's forestry laws and agencies, and the resources found therein, it is clear that we are talking about a considerable proportion of Indonesia's land area, natural resources, and population. Furthermore, we are talking about a political representation of "forest," not only an economic or ecological one, and the long history of conflicts within the political forest indicates that it is a contested political representation.

Resolution of conflicts in that vast area, and management of its considerable natural resources, are thus clearly important concerns for the future political and economic security of Indonesia, for at least five reasons:

First, sustainable and productive management of forest lands and resources—including those areas already converted or slated for conversion to plantations and other uses—will be a key determinant of Indonesia's short-term economic recovery and its long-term economic sustainability, as will be shown elsewhere in this chapter.

Second, three decades of Suharto-era administration of forest lands and resources has left a bitter legacy of usurpation and anger among local com-

munities throughout the country. Logging, mining and petroleum concessions, transmigration schemes—and later, timber and oil palm plantations—were established without regard for existing local forest land uses or the customary (*adat*) law systems governing them. While Suharto cronies grew wealthy in Jakarta, millions of local people lost their access—often by force—to the forest resources they depended on, and tribal groups were subjected to demeaning programs intended to “civilize” them. In the post-Suharto era, many of these people justifiably feel that it is “payback time”—recent events have illustrated that either the government must respond to this mandate, or people will take the law in their own hands to redress their grievances, sometimes violently. Unfortunately, another legacy of the Suharto era is a situation in which traditional dispute mechanisms have been dismantled, and nothing has been put in their place: The New Order’s response to forest-related disputes was either to ignore them or repress them by force, leaving local people with little alternative but to suffer or to resist by way of surreptitious sabotage or (infrequently) open rebellion.

Third, in the timber sector itself, the majority of the country’s timber is now supplied by large-scale, organized illegal logging. Given the importance of timber to the economy—the forest products sector was worth at least \$8 billion in 1998 (with some estimates reaching \$20 billion)—the fact that most log production in the country is now in the hands of organized crime would certainly seem to be a legitimate security concern. Large scale illegal mining—almost all of it in or adjacent to forest lands—has also exploded across Indonesia, particularly in Kalimantan, on a staggering scale—the government estimates that there are 62,000 illegal miners across the country, twice the number working legally.¹⁴²

Fourth, three decades of forest mismanagement and degradation have resulted in extensive and recurrent fire episodes. In 1997-98, fires—most intentionally set to clear plantation lands—affected 10 million ha and caused damages of at least \$10 billion. “Haze” from the fires blanketed not only much of Indonesia but also Singapore and much of Malaysia for months on end, creating considerable friction between Indonesia and its neighbours.

Finally, the bloody “ethnic and religious strife” that dominated Indonesian headlines for much of 2000 and 2001 is closely tied to competition over forests and natural resources. These conflicts clearly demonstrate that forests are one of the nation’s key security concerns—not only “blood,” “culture” and “religion.” As Hildyard argues (in reference to Rwanda and Yugoslavia):

“Blood” and “Culture” have long provided people the world over with seemingly “commonsense” explanations for civil conflict.... How else can the sheer horror of neighbours hacking each other

to pieces be explained—neighbours who had previously lived together in apparent harmony?... Yet scratch below the surface of inter-ethnic civil conflict, and the shallowness and deceptiveness of “blood” or “culture” explanations are soon revealed. “Tribal hatred” (though a real and genuine emotion for some) emerges as the product not of “nature” or of a primordial “culture,” but of a complex web of politics, economics, history, psychology and a struggle for identity.

This is not to deny that ethnicity—be it in Rwanda or anywhere else in the world—is a very real social force, a force whose outcome can be as positive as it can be murderous. It is to insist, however, that the shared values, histories, customs and identities that generate “ethnicity” are socially constructed. At root, ethnic conflicts result not from blood hatred, but from socially, politically and economically-generated divisions.¹⁴³

The savage “ethnic cleansing” of Madurese immigrants by local Dayaks in Central Kalimantan in early 2001, for example, arose largely as a result of competition over forest lands and resources caused by the Suharto-era transmigration resettlement program on Kalimantan:

The transmigration program in Kalimantan resulted in the rain-forests being replaced by palm oil and coconut plantations. The Dayaks soon found themselves at the bottom of the economic pile and unable to pursue their traditional means of existence.... The government appropriated Dayak lands whilst no efforts were made to give them a chance to share in the exploitation of their traditional resources.... This was colonization happening a second time around and was met by indigenous resistance that has grown over the years.... This was a powder keg waiting to be ignited.¹⁴⁴

The causes of conflict here, as elsewhere across the country where race or religion is blamed, are age-old patterns of greed and injustice now dressed up in exotica. Kalimantan was often seen by policy-makers in Jakarta as an empty place full of natural resources which would be there for the plucking as long as Jakarta’s generals and cronies of former president Suharto wanted them. Forestry concessions were dished out by Suharto to buy off or appease people in his way. State firms and foreign investors arrived to take what logs, coal, gold and oil they could.... For the Dayaks, old patterns of cultivation and sustainable forest management were wiped out. Land title, which was once a matter of communal agreement, was lost.... Even though the culprits in this drama sit more in national government than in any particular racial group, it was the migrants who took the blame.¹⁴⁵

Many observers also believe that the bloody Moslem-Christian fighting in Maluku has been fanned and manipulated by the remnants of Suharto's New Order regime in order to paralyze and discredit the present government, derail investigations into past corruption and military brutality, and preserve their power over natural resource-based and other sources of income.¹⁴⁶

In short, forest resources, conflict and security are closely linked in today's Indonesia. Security issues as fundamental as the unity or break-up of the nation, and the ability of elected president to remain in office¹⁴⁷ are inextricably tied to the fate of Indonesia's forests, and the Suharto-era legacy of their mismanagement and plunder.

3. Indonesia's Forest Resources in Crisis

3.1 What is at Stake? The Values of Indonesia's Forests

Indonesia possesses the greatest remaining expanse of tropical rainforest in Southeast Asia, and is one of the planet's most important repositories of forest biodiversity.¹⁴⁸ These forests are an important source of livelihood for millions of forest-dependent people—including many indigenous forest-dwelling peoples with long-standing customary traditions of forest resource management—as well as a key component of the national economy.

Much of the vast area legally classified as “forest land” of various types is already deforested or in varying states of degradation. But despite the importance of forest resources to Indonesia, relatively little good data exist about their extent and condition. One reason is that hundreds of millions of dollars put into forest mapping in the 1990s was corruptly siphoned off by one of Suharto's closest cronies, erstwhile “timber king” Mohamed “Bob” Hasan.¹⁴⁹

Estimates of actual forest cover made in the early 1990s ranged from 92.4 million to 113 million hectares.¹⁵⁰ A 1999 estimate, based on 1997 satellite imagery, concluded that about 95.8 million ha still carried some form of forest cover, but cautioned that the analysis could not shed light on the condition of those forest areas.¹⁵¹ Indeed, a 2000 recalculation of forest areas, carried out by the Ministry of Forestry and Estate Crops, concluded that only about 36 million ha of primary forest remained in Indonesia, while an additional area of about 14 million ha consisted of logged-over forest still in good or medium condition.¹⁵² This accords with a 1997 World Resources Institute (WRI) analysis which concluded that Indonesia had only some 53 million hectares left of “frontier forest”—relatively undisturbed areas of forest big enough to maintain all of their biodiversity.¹⁵³

Biologically, these remaining forests are extremely diverse. While Indonesia occupies only 1.3 per cent of the world's land area, it possesses about 10 per cent of the world's flowering plant species, 12 per cent of the world's mammals, 17 per cent of all reptile and amphibian species, and 17 per cent of all birds.¹⁵⁴ The country's 17,000 islands span the Indomalayan and Australasian realms, and the archipelago contains seven major biogeographic realms and a great diversity of habitat types. Forest habitats range from evergreen lowland dipterocarp forests in Sumatra and Kalimantan—among the most species-rich on earth—to seasonal monsoon forests in Nusa Tenggara, non-dipterocarp lowland forests in Irian Jaya, and the world's largest areas of mangrove forest. Many islands have been isolated for millennia, so levels of endemism are high. Of 429 locally endemic bird species, for example, 251 are unique to single islands. Most of Indonesia's insects are also found nowhere else, with many genera confined to individual mountain-tops.

In addition to acting as a storehouse of biological riches, products from Indonesia's forests constitute a significant part of the national economy. During the 1990s, forest products, on average, contributed about six–seven per cent of GDP and 20 per cent of foreign exchange earnings, with forest product revenues in 1998 totaling \$8.5 billion, ranking second only to oil.¹⁵⁵ An industry source predicted in January 2000 that the value of forestry sector export production alone (not, presumably, including production for the domestic market), would reach \$8 billion—and claimed that a similar figure had been attained in 1999.¹⁵⁶ Confusingly, however, the Ministry of Forestry and Plantations Strategic Plan for 2001–2005, issued in July 2000, states that the contribution of forestry to the national economy in the fiscal year 1998/1999 totaled nearly \$23.7 billion, with plantation crops contributing an additional \$4.1 billion.¹⁵⁷ Despite these considerable discrepancies in the various ways that the “total value of the forestry sector” is tallied, it is clear that forests are a key component of the Indonesian economy. Some 183,000 people were directly employed in the legal logging and forest products sectors in 1997,¹⁵⁸ And given that at least half of Indonesia's timber is thought to be cut illegally, as discussed below, there are probably as many as 200,000 people employed in illegal operations.

Indonesia's forests also yield many non-timber forest products, the most valuable of which are rattan canes, which had an export value of \$360 million in 1994.¹⁵⁹ The total value of exports of “wildlife and plants” for the 199/2000 fiscal year was more than \$1.5 billion according to the Ministry of Forestry and Plantations, although the components of this aggregated total are not specified.¹⁶⁰ The forests also provide valuable environmental services such as protecting the hydrological balance of watersheds and storing carbon that would otherwise increase the concentration of greenhouse gases in the earth's atmosphere.

A large but undetermined number of forest-dwelling or forest-dependent communities live in or adjacent to Indonesia's forests. Estimates made over the past several decades have varied wildly on the precise numbers—from 1.5 to 65 million people—depending on which definitions was used and which policy agenda was at stake.¹⁶¹ As of mid-2000, the Ministry of Forestry and Plantations reported that 30 million people “depend directly on the forestry sector for their livelihoods.”¹⁶² Many of these forest-dwellers live by long-sustainable “portfolio” economic strategies which combine shifting cultivation of rice and other food crops with fishing, hunting, the gathering of forests products (e.g., rattan, honey, resins) for use and sale, and the cultivation of tree crops such as rubber for sale. These local values of the forest are poorly appreciated, though, because they are not reflected in formal market transactions.

3.2 Deforestation Rates in Indonesia

Until mid-1999, Indonesia's deforestation rate was variously estimated to be between 0.6 and 1.2 million ha by various sources.¹⁶³ A forest cover mapping effort carried out by the government with support from the World Bank during 1999, however—analyzing 1997 satellite imagery—concluded that the average annual deforestation rate for the years 1986-1997 has actually been about 1.7 million ha (See Table C1). Hardest hit was Sumatra, where 30 per cent of the huge island's forest cover vanished during this period.¹⁶⁴ Deforestation has also brought an increase in poaching, with some of Indonesia's most well-known large mammal species—such as the Sumatran tiger and the orangutan—headed towards extinction.¹⁶⁵

In short, Indonesia appears to have lost some 20 million ha of forest between 1985 and 1997, and probably an additional four million ha since then, for a total of 24 million ha over the past 15 years—an area roughly the size of Laos or the United Kingdom, and fully 25 per cent of the area that was forested in 1985.

From a biodiversity perspective, the massive loss of the lowland rainforests, particularly in Kalimantan and Sumatra, is the most destructive. If current deforestation trends continue, a World Bank study estimates that “non-swampy lowland forest will become extinct in Sumatra by before 2005, and in Kalimantan soon after 2010.”¹⁶⁶ These lowland rainforests are also poorly represented (less than five per cent are included) in the national system of protected areas.

Table C1. Forest Cover and Deforestation in Indonesia, 1985–1997

	1985		1997		Deforestation		
	Forest	% total land area	Forest	% total land area	Decrease 1985-97	% loss	Ha/year
Sumatra	23,324,000	49%	16,632,000	35%	6,691,000	29%	558,000
Kalimantan	39,986,000	75%	31,512,000	60%	8,474,000	21%	706,000
Sulawesi	11,269,000	61%	9,000,000	49%	2,269,000	20%	189,000
Maluku*	6,348,000	81%	[> 5,544,000]	?	> 800,000	13%	67,000
Irian Jaya	34,958,000	84%	33,160,000	81%	1,798,000	5%	150,000
Total	115,885,000	68.5%	c. 95,848,000	57%	20,505,000	17%	1,709,000

* Data for Maluku are preliminary

Source: World Bank, 2000. "Deforestation in Indonesia: A Review of the Situation in 1999." Draft. Jakarta. May 5.

3.3 Forest Mismanagement in the Suharto Era: The Roots of Deforestation and Conflict

These alarming rates of deforestation have their roots in the forestry policies and practices of the corrupt and cronyism-riddled Suharto era. For three decades, the Suharto regime pursued a policy of centralized and predatory forest resource extraction and forest conversion (to plantations and resettlement colonies), largely ignoring conservation concerns and suppressing local community resistance. Today, Suharto is gone but Indonesia still faces his regime's legacy of forest resource scarcity, social conflict and vulnerability to catastrophic fires.

Under Indonesia's Constitution, authority and responsibility for "branches of production which are important for the State and which affect the lives of most people," belongs to the state. Outside of Java, however, there was little commercial exploitation of forest resources until the late 1960s, and forests were for the most part governed by local systems of customary (*adat*) law and resource management. Under Suharto this situation rapidly changed, and the constitutional mandate of state "authority" over forests was basically interpreted to mean that the state "owned" the nation's forest lands. Under the 1967 Forestry Law and its numerous implementing regulations, certain lands were classified by Ministerial Decree as official "Forest Area"—an area that officially expanded to some 144.5 million ha at one point, fully 76 per cent of the country's land area, and includes many non-forested areas, as noted above. In turn, Forest Areas were sub-classified for production, various types of protection, or conversion to non-forest land uses such as agricultural plantations. In the 1980s, "consensus" maps delineating these categories were drawn up for each province.¹⁶⁷

Table C2 compares official forest area classifications from 1986 (Based on these "consensus" maps) and the figures released by the Ministry of Forestry and Plantations in mid-2000. Note, however, that the latest figures from the Ministry vary significantly from the figures in Table C3, below, which are drawn from a World Bank analysis using other official figures from 1999—such reporting variations are common in Indonesia's forestry sector.

The most important consequence of this state-controlled system of forest land use allocation was the rapid parceling out during the 1970s and 1980s of more than 500 20-year, renewable logging concessions to private sector firms. Officials figures state that these concessions generated 612 million m³ of logs between 1970 and 1999, although some industry analysts have argued that actual removals were approximately twice this volume.¹⁶⁸ In the 1990s, additional areas were allocated to industrial timber plantations (4.7 million ha) and large-scale plantation development, primarily for oil palm (three million ha)—some of that area being former logging conces-

Table C2. Official Forest Land Use Classifications by Area, 1986–2000

Forest classifications	1986		2000		Change 1986–2000	
	Area (ha)	%	Area (ha)	%	Area gain/(loss)	% gain/(loss)
Normal production	31,850,000	22%	35,200,000	29%	3,350,000	10.5%
Limited production	30,520,000	22%	21,800,000	18%	(8,720,000)	(28.5%)
Protection	29,680,000	21%	31,900,000	27%	2,220,000	7.5%
Conservation	18,250,000	13%	23,300,000	19%	5,050,000	27.5%
Conversion ¹⁶⁹	30,540,000	22%	8,200,000	7%	(22,340,000)	(73%)
Total	140,840,000	100%	120,400,000	100%	(20,440,000)	(14.5%)

Sources: *Ministry of Forestry Strategic Plan 2001–2005*. Jakarta: Ministry of Forestry and Plantations. July 2000 (for 2000 data.); RePPPProT (Regional Physical Planning Programme for Transmigration), *The Land Resources of Indonesia: A National Overview*. Jakarta: Overseas Development Administration (U.K.) and Department of Transmigration. 1990 (for 1986 data).

sions degraded by poor logging practices. Nearly three million ha were also allocated for clear-cutting and use by the government's "transmigration" program, which sought to relocate peasants from the over-crowded volcanic islands of Java and Bali to the country's forested "outer islands," primarily Sumatra, Kalimantan, Sulawesi, and Irian Jaya (western New Guinea, renamed Papua in 1999). By contrast, only 17.3 million ha of the country's forests were included in conservation areas, with an additional 30.1 million ha designated as Protection Forest (generally water catchments and steeply sloping areas). Table C3 summarizes the official data, as of 1999, on the area of permanent forest estate (i.e., not including areas slated for conversion to non-forest uses) and actual forested area within it (but note discrepancies with other official data issued in mid-2000 on the area of permanent forest estate, in Table C3.)

Table C3. Permanent Forest Land Categories and Proportion Holding Forest Cover

Functional category	Designated area, forest land 1999 (ha)	Actual extent of forest cover (ha)	Per cent of designated area with actual forest cover
Protection forest	30,100,000	24,100,000	80%
Park and reserve forest	17,300,000	14,900,000	86%
Production forest	30,600,000	24,700,000	81%
Limited production forest	31,000,000	25,300,000	83%
Total	109,000,000	89,000,000	82%

Source: Fox, J., M. Casson and G. Applegate, *Forest Use Policies and Strategies in Indonesia: A Need for Change*. Jakarta. Paper prepared for the World Bank. May, 2000.

Logging Concessions and the Timber Industry

When the Suharto's New Order came to power in the mid-1960's, economic planners took immediate steps to develop Indonesia's weak economy and began to develop the legal framework to permit private firms to harvest and export timber. Sumatra and Kalimantan were the first targets of forest exploitation because they had the largest stocks of commercially valuable tree species and were closest to Asian markets, and numerous logging concessions were granted there.

Export of unprocessed logs rose dramatically in the 1970's, providing foreign exchange, capital to build Indonesia's emerging business empires.

From 1969 to 1974, for example, nearly 11 million ha of logging concessions were granted in East Kalimantan alone.¹⁷⁰ While only four million m³ of logs were cut from Indonesian forests in 1967—mostly for domestic uses—by 1977 the total had risen to approximately 28 million m³, at least 75 per cent of that for export.¹⁷¹ Gross foreign exchange earnings from the forestry sector rose from \$6 million in 1966 to more than \$564 million in 1974. By 1979, Indonesia was the world's major tropical log producer, with a 41 per cent share (\$2.1 billion) of the global market, representing a greater export volume of tropical hardwoods than all of Africa and Latin America combined.¹⁷²

Roads, towns, and other infrastructure were built in Sumatra and Kalimantan in the wake of the timber bonanza, and the populations of these islands grew substantially. East Kalimantan, which was undergoing a simultaneous oil boom, doubled its population between 1970 and 1980, transforming the landscape as agricultural settlers followed the loggers into the forests.¹⁷³

The timber industry went through a period of consolidation as a ban on log exports was imposed in the early 1980's, creating a few enormous vertically integrated timber firms that concentrated on plywood production.¹⁷⁴ The number of plywood mills in the country rose from 21 in 1979 to 101 in 1985 and production rose from 624,000 m³ in 1979 to nearly 4.9 million m³ in 1985, and rose further to over 10 million m³ in 1993, nearly 90 per cent of that exported. At the same time, the industry became increasingly concentrated in the hands of a small number of regime-connected firms. By 1994, the top ten groups controlled nearly 24 million ha (37 per cent) of the 50 million ha of logging concessions in the country, a figure which rose to 64 per cent in timber-rich East Kalimantan. These big firms formed a cartel (*Apkindo*) that made Indonesia the world's largest plywood producer and succeeded in raising international plywood prices.¹⁷⁵ Suharto's family and inner circle were important players in the industry. According to the watchdog group Indonesian Corruption Watch, Suharto's family alone had a forest concession area of 4,130,000 ha.¹⁷⁶

The year 1995 was the high water mark for the Indonesian timber industry, with some 585 concessions holding nearly 70 million ha across the country—more than one-third of the nation's total land area.¹⁷⁷ Beginning in the mid-1990s, however, numerous concessions whose 20-year contract period had ended were either transferred into the hands of five state-owned forestry corporations (*Inhutani I through V*),¹⁷⁸ or reconstituted as joint ventures between private firms and one of the *Inhutani*s. By mid-1998, only 39.3 million ha remained wholly in the hands of private concession-holders, while 13.7 million ha were being managed by the five state *Inhutani* firms, eight million ha were under state-private joint

ventures, and an additional 8.3 million ha had been slated for conversion to non-forestry uses.¹⁷⁹

In early 2000, the Ministry reported that there were 387 concessions still actively operating, out of a total of 500 licensed to operate over a total forest area of 55 million ha—most of which was in a damaged condition.¹⁸⁰ A further Ministry analysis, released in July 2000, however, stated that there were a total of 652 recognized concession units covering an area of 69.4 million ha, with 293 units still holding valid licenses (nearly 34 million ha), 288 with expired licenses but apparently still in place (nearly 30 million ha), and 71 units (about 5.5 million ha) which had been formerly returned to government control (See Table C4).

Table C4. Production Forest Area and Logging Concession Area and Status as of 2000

Logging concession status	Number of units	Area (ha)
20-year concession grant still running	293	33,950,000
20-year concession grant expired	288	29,980,000
Expired concessions formally returned to state control	71	5,470,000
Total	652	69,400,000

Source: *Penataan Kembali Pengelolaan Hutan Produksi di Luar P. Jawa Melalui Restrukturalisasi Kelembagaan Usaha di Bidang Kehutanan [Reorganizing Management of Production Forests Outside Java by Restructuring Forestry Sector Management Institutions]*. Jakarta: Ministry of Forestry and Estate Crops, July 2000. Available at <http://www.dephut.go.id/informasi/umum/restrukturalisasi.htm>.

Logging concessionaires in Indonesia operate under a huge number of regulations and contractual provisions that in theory obligate them to implement a sustainable selective cutting system, replant logged areas, pay royalties, defend concession areas against illegal loggers, and observe a variety of environmental safeguards. In reality, these rules are rarely followed, and abuses are widespread.

The extensive damage wrought by the concession system over the past three decades is only now being documented and acknowledged by the government. Based on analysis of 1997-1999 Landsat satellite imagery covering 46.7 million ha of running and expired concessions, the Ministry announced in mid-2000 that only 41 per cent of that area still remained under primary forest cover, 29 per cent consisted of logged-over forest in “good” or “moderate” condition, and fully 30 per cent was fully degraded (See Table C5). Extrapolating those figures to the entire 69.4 million ha of forest now or recently held by logging concessions, it can be provisionally

concluded that some 20 million ha of Indonesia's most biologically diverse and economically valuable forests—an area twice the size of Portugal and four times the size of Costa Rica—have been destroyed by concession activities alone over the last three decades.

Table C5. Forest Condition in 432 Current and Expired Logging Concessions Covering 46.7 million Hectares (Based on Analysis of 1997-1999 Landsat Images)

	Concession areas (320 units)		Expired concessions managed by state forestry corporations PT. Inhutani I-V (112 units)		Total	
Forest condition	Area (ha)	%	Area (ha)	%	Area (ha)	%
Primary forest	18,300,000	45	600,000	11	*18,900,000	41
Logged forest in good-moderate condition	11,100,000	27	2,500,000	44	13,600,000	29
Degraded forest, scrub and agriculture	11,600,000	28	2,600,000	45	14,200,000	30
Total	41,000,000	100	5,700,000	100	46,700,000	100

Note: * 7.3 million ha of the 18.9 million ha of primary forest remaining in the area surveyed (39 per cent of it) lies within Papua Province (Irian Jaya)

Source: *Penataan Kembali Pengelolaan Hutan Produksi di Luar P. Jawa Melalui Restrukturalisasi Kelembagaan Usaha di Bidang Kehutanan [Reorganizing Management of Production Forests Outside Java by Restructuring Forestry Sector Management Institutions]*. Jakarta: Ministry of Forestry and Estate Crops, July 2000. Available at <http://www.dephut.go.id/informasi/umum/restrukturisasi.htm>.

In April, 2000, the Forestry and Estate Crops Ministry announced that it would stop issuing licenses for new concessions, and would carefully study existing concessions whose licenses had expired before granting any extensions.¹⁸¹ In November 2000, however, the Ministry suddenly announced that it was issuing 21 new concessions and granting 49 extensions or renewals of existing concessions.¹⁸² Meanwhile, nothing has been done to reduce demand from the country's wood processing industries. The state-sponsored expansion of the plywood industry in the 1980s created considerable over-capacity in relation to the amount of timber Indonesia's forests can sustainably produce. In September 1998, the Minister of

Forestry and Estate Crops predicted that the wood-processing industry would face an annual log shortage of at least 25 million m³ over the next five years. As of mid-1998, the industry officially included 1,702 sawmill companies, with a combined annual production of 13.3 million m³, 105 plywood firms with installed capacity of 8.1 million m³, and six pulp and paper companies with production capacity of 3.9 million m³. Taken together and producing at full capacity, these industries needed 57 million m³ of timber at that time, while the officially-designated annual cut for the ensuing five years was set at 31.4 million m³.¹⁸³ That target was in fact much higher than other estimates of a sustainable cut. The World Bank's 1993 Indonesia Forestry Sector Review, for example, argued that a realistic level would be only 22 million m³ per year. By April 2000, the Ministry's estimate of annual industry demand had risen to 63.5 m³ of logs, while legal timber production had dropped to 18 million m³,¹⁸⁴ down from approximately 26 m³ in 1998 (See Table C6).

Table C6. Timber Supply in Indonesia, 1998: Estimated Contributions of Legal and Illegal Logging

Number of timber concessions	464 units
Area of timber concessions	51,251,052 ha
1. Estimated legal production from concessions	15,769,385 m ³
2. Estimated legal production from forest land conversion	10,162,080 m ³
3. Total legal production of timber (1+2)	25,931,465 m ³
4. Total amount of timber used by licensed mills	46,587,681 m ³
5. Use of Illegally-Logged Timber by Licensed Mills (4-3)	20,656,216 m ³
6. Estimated Illegal logging for pulp and paper industry and domestic use	11,943,784 m ³
Total illegal timber production	32, 600,000 m ³

Source: Brown, D.W. 1999. *Addicted to Rent: Corporate and Spatial Distribution of Forest Resources in Indonesia*. Jakarta. DFID/ITFMP.

Illegal Logging

Illegal logging is widespread and systematic in many parts of Indonesia. Indeed, Indonesia's timber economy can now be said to be largely an illegal, underground economy: According to a 1999 study by the Indonesia-U.K. Tropical Forest Management Programme, illegal removals are thought to be in the range of 30 million m³ per year, exceeding legal cutting¹⁸⁵ and thus supplying the majority of the country's timber (See Table C6). A senior official of the Ministry of Forestry and Estate Crops pre-

sented an even grimmer view in early 2000, revealing that the Ministry's most recent data, for 1998, showed that legal log production in that year was only about 21 million m³—down from 30 million m³ in 1997—while illegal logging jumped to 57 million m³ to account for 70 per cent of total wood consumption for the year. The main cause, he said, was that “the wood-processing industry has been allowed to expand without reference to the available supply of timber, resulting in vast overcapacity. The shortfall in the official timber supply is being met largely by illegal logging, which has reached epidemic proportions.”¹⁸⁶

Illegal timber brokers flourish throughout the country, supplying processors who cannot obtain adequate supplies legally.¹⁸⁷ Logging concession roads often provide illegal loggers with access to the forest, encouraged by the lack of meaningful access controls by either the logging firms or local forestry officials. Corruption among civilian and military officials, many of whom are closely involved in illegal cutting and marketing, is pervasive.¹⁸⁸ As one Indonesian environmental activist put it during a January 2000 Consultative Group on Indonesia (CGI)¹⁸⁹ meeting on forests, “Illegal logging is not simply about destruction of the forests. It's also about the system of corruption and wealth that it creates.”¹⁹⁰ A June 2000 analysis from the Ministry of Forestry and Estate Crops officially stated what has been common knowledge for some time:

Illegal logging has come to constitute a well-organized criminal enterprise with strong backing and a network that is so extensive, well established and strong that it is bold enough to resist, threaten, and in fact physically tyrannize forestry law enforcement authorities.... Illegal cutting occurs in concession areas, unallocated forest areas, expired concessions, state forestry concessions, areas of forest slated for conversion, and in conservation areas and protected forests.

Indeed, illegal logging is increasing in conservation areas, since these areas have better timber potential than production areas. The actors in illegal logging are: (a) laborers from communities in the forest areas and also many who are brought there from other areas; (b) Investors, including traders, concession holders, or holders of legal timber cutting permits (IPK), and buyers of illegal timber from processing industries; and (c) Government officials (both civilian and military), law enforcement personnel, and certain legislators.¹⁹¹

Official involvement in illegal logging has become so blatant and widespread that provincial legislators in Sumatra's Jambi province felt obliged to make a public appeal to military, police and justice officials to stop supporting illegal loggers' operations.¹⁹² Indeed, illegal logging has become so

pervasive that the Indonesian Plywood Association (Apkindo) complained in June 2000 that illegal sources from Sumatra and Kalimantan were supplying at least one million m³ of Indonesia's seven million m³ China market.¹⁹³ And the international aid agencies and lending institutions grouped in the Consultative Group on Indonesia (CGI) have issued a number of warnings that continued aid to the forestry sector is contingent on more effective action to eradicate illegal logging.¹⁹⁴

Timber plantations

Beginning with the Fourth Five-Year Development Plan in 1984, and accelerating around 1990, the Indonesian government launched an ambitious plan to establish vast areas of monocultural fast-growing timber plantations, particularly in Sumatra and Kalimantan. At the outset, the government justified the program in terms of augmenting supplies of timber from the natural forests and promoting nature conservation,¹⁹⁵ and to this ostensible end timber plantation entrepreneurs have received interest-free loans from the "Reforestation Fund" collected from logging concessions. In addition, a joint program of the Ministries of Forestry and Transmigration was introduced in 1992 under which the government would supply 40 per cent of investment, plus labour from specially-established transmigration settlements, while investors would supply the remaining capital. By 1999, more than 757,000 ha of allocated concessions—and about 25 per cent of the area actually planted—were linked to transmigration sites.¹⁹⁶

The timber estate program got off to a slow start. In the late 1980s, the government was planning to open 1.5 million ha annually, reaching a total of between 4.4 and 6 million by the year 2000. But by 1999, the total area actually planted stood at about one million ha, according to one set of government figures.¹⁹⁷ Another set of figures (from a World Bank analysis of government figures) shows 2.4 million ha of plantations having been "realized" by the end of 1998 (See Table C7)—as already noted, conflicting figures such as this are common in Indonesia's forestry sector, and all such estimates should be considered provisional.

Despite its initial professed intentions, the timber estate program has in fact become a powerful engine of deforestation and is currently almost totally devoted to providing feedstock for the rapidly-growing pulp and paper industry, which is annually adding some 13 million m³ of demand that would not exist in the absence of the industry's growth.¹⁹⁸ Plantations have often been established on degraded timber concessions by the very same firms whose poor logging practices degraded the forest in the first place. As the World Bank has pointed out, "logging operations can degrade a site with little risk of serious penalty, and in the process set themselves up to receive a license to convert the site so damaged into a HTI [timber plantation] or tree crop estate."¹⁹⁹

Table C7. *Timber Plantation Development to 1998 (Ha)*

	Allocated	Realized to 1998
Sumatra	2,148,964	893,463
Kalimantan	2,928,414	956,261
Sulawesi	255,791	85,455
Maluku	64,775	77,656
Irian Jaya	153,250	39,996
Other	48,730	352,215
Indonesia	5,599,924	2,404,364

Source: World Bank, 2000. "Deforestation in Indonesia: A Review of the Situation in 1999." Draft. Jakarta. May 5.

The pulp and paper industries have grown without any reference to the growth of plantation timber supplies. Investments in the sector between 1987 and 1999 totaled \$8 billion, and the total size of both industries has grown by over 750 per cent in that period. Pulp producers are currently capable of producing 4.6 million tons of pulp per year, which requires timber feedstock of 22.5 million m³. But of the 100 million m³ of timber consumed by pulp firms since 1987, only five million m³ has come from plantations—the remainder has come from legal clearcutting on plantation concessions, and illegal sources.²⁰⁰

While physical plantations have only provided a tiny percentage of the feedstock for pulp firms, the areas allocated for plantation development have provided a great deal of timber to the industry—through the clear-cutting of natural forests within plantation concessions. Timber plantation concessions tend to be quite large, in the range of 200,000 to 300,000 ha. But in reality, only 60,000 to 80,000 ha of each concession is actually being planted with new trees. The remainder of these plantations, usually logged-over but sometimes unlogged primary forest, are logged to supply the designated mill operation until the rotation planting can supply pulpwood at some theoretical time in the future.²⁰¹ Thus, as of early 1999, the government's latest statistics showed that only about 1 million ha of physical plantations had been established in all of Indonesia, out of a total area of nearly three million ha allocated to plantations—a mere 35 per cent.²⁰² The remaining two million ha is rapidly being clearcut and, in many cases, burned: Industrial timber plantation firms were identified as major culprits in the intentional setting of fires to clear land during 1997. Of the 176 plantation firms accused by the Forestry and Environment Ministries in September 1997, 28 of them (16 per cent) were industrial timber plantations.²⁰³

Oil Palm Plantations

The development of estate crops—oil palm, coconut, rubber, cocoa and the like—has been a powerful engine of deforestation in Indonesia, with oil palm by far the most important crop in this regard. Palm oil is extracted from the fruit of a species of palm originating in Africa (*Elaeis guineensis*), and is widely used as cooking oil and as an ingredient in soap, margarine, and a variety of other products. Global production grew from 14.7 million tons in 1994 to nearly 16 million tons in 1997. Production in that year was dominated by Malaysia (50.6 percent), the largest producer, and Indonesia (28.8 percent), the second largest. Global production is expected to grow by more than 7 per cent annually for the foreseeable future, and Indonesia is expected to be produce some 12.2 million tons in 2005, 41.4 per cent of the total.²⁰⁴

Expansion of oil palm plantations is currently among the most important forces driving deforestation in Indonesia, although different sources give widely varying estimates of area planted, and all of the figures presented here should be treated as approximations. According to several sources, the area covered by these plantations grew from 106,000 ha in 1967 to about 606,000 ha in 1986, and skyrocketed to 2.5 million ha in 1997.²⁰⁵ A World Bank analysis published in 2000 provides slightly different estimates (See Table C8). 46 per cent of oil palm area is held by private companies, with small-holders and older state-run plantations making up the rest.²⁰⁶

Table C8. Oil Palm Plantation Development, mid-1980s to 1998 (ha)

	Oil palm area mid-1980s	Oil palm area 1998	New oil palm area since mid-1980s	Outstanding applications from developers (1995)
Sumatra	805,800	2,240,495	1,434,695	9,395,697
Kalimantan	0	562,751	562,751	4,760,127
Sulawesi	11,800	101,251	89,451	665,379
Maluku	0	0	0	236,314
Irian Jaya	23,300	31,080	7,780	590,992
Other	1,800	21,502	19,702	1,777
Indonesia	842,700	2,957,079	2,114,379	15,650,286

Source: World Bank, 2000. "Deforestation in Indonesia: A Review of the Situation in 1999." Draft. Jakarta. May 5.

Most plantations are currently in Sumatra, with Kalimantan being rapidly developed (particularly West Kalimantan), and Papua (Irian Jaya) the primary target for future expansion. According to one recent study, “it can be said that almost all of the existing oil palm plantation areas result from the conversion of production forest.” This is because the procedure for acquiring forest land is relatively easy, and the firm can clear-cut and sell standing timber, a profitable side-business. As of 1997, the agreed area of Production Forest to be converted for plantations had reached 6.7 million ha—in addition to nine million ha proposed for further tree crop plantation development on other lands.²⁰⁷

The Suharto government aimed to reach a total of 5.5 million hectares of oil palm plantations by the year 2000. The economic crisis temporarily slowed plantation expansion, however, and the actual figure for 2000 is approximately three million ha.²⁰⁸

Indonesia’s palm oil industry is dominated by some of the same domestic conglomerates that control the logging, wood processing, and pulp and paper industries. Just four companies hold 68 per cent of the one million hectares of estates in private hands in 1997.²⁰⁹ There is also considerable foreign investment: at the end of 1998, there were 50 foreign firms involved in the oil palm sector with total investments valued at \$3 billion.²¹⁰

Table C9. The Growing Role of Land Clearing (Clear-Cutting) in Indonesia’s Legal Timber Production, 1995–1998 (m³)

Source of production	1995	1996	1997	1998	% of production 1995 1998	
Logging concessions	17,308,737	16,943,933	15,268,134	15,597,546	78%	57%
Land clearing (clear-cutting)	4,708,696	5,398,196	8,021,328	10,038,228	21%	37%
Community woodlots	138,105	124,883	682,006	1,266,455	1%	4.5%
Timber plantations	—	514,692	474,268	425,893	0%	1.5%
Total	22,155,538	22,981,704	24,445,736	27,328,122		

Source: World Bank, *The Challenges of World Bank Involvement in Forests: An Evaluation of Indonesia’s Forests and World Bank Assistance*. Washington, D.C. 2000.

As with timber plantations, oil palm firms were major culprits in the fires of 1997–98, and are considered to be the largest single forest fire risk factor in Sumatra and Kalimantan. Burning is attractive to plantation firms because it removes waste wood and vegetation rapidly, and requires relatively little heavy equipment and technical expertise.²¹¹

And together with timber plantations, the clear-cutting of forests for oil palm has become an increasingly important source of Indonesia's supply of timber from natural forests. Clear-cutting is technically illegal on permanent forest lands, but when areas are officially slated for conversion to plantations, permission to clearcut is an often-lucrative part of the deal. Timber from this kind of land-clearing contributed 37 per cent of the legally documented timber supply in 1998, up from 21 per cent in just four years (See Table C9).

The Transmigration Program

Transmigration—the government's long-running program to resettle people from densely populated Java and Bali to Sumatra, Kalimantan, and the other “outer islands”—opened 1.7 million hectares of agricultural land and transported some 8 million people between 1969 and 1993. The actual impacts on forests are much greater, however, given the poor site choices and the land-clearing practices employed. A 1994 World Bank evaluation of the \$560 million in loans it made to Indonesia for the program during the 1970s and 1980s concluded that land clearing was not carried out according to agreed legal and contractual guidelines. Slopes over eight per cent had been cleared, trees were bulldozed into waterways, erosion measures along contours were not taken, and no attempt was made to harvest the commercial timber left partly burned in the field. Impacts on local communities, particularly traditional indigenous groups, have been extremely negative. In the case of the forest-dwelling Kubu of Sumatra, for example, the report concluded that “there has been a major negative and probably irreversible impact” on that group's livelihood and culture.²¹²

Over the past decade, the emphasis of the transmigration program has shifted away from subsistence agriculture and towards providing wage labour on industrial timber estates and oil palm plantations—almost 39 per cent of timber estate areas that have actually been planted lie in transmigration sites,²¹³ and nearly one million ha of oil palm plantations had been established with a formal link to transmigration sites by the end of 1995.²¹⁴

Since the fall of Suharto, simmering tensions between transmigrants and locals—often concerning competition over forest resources—have erupted in violence throughout the country, leading to hundreds of deaths, as discussed later in this paper. By 2000, the program had largely ended, with

the Minister in charge of looking after the program saying “Transmigration is finished. The only people being relocated now are refugees. We are having to clean up the mess that Suharto’s government left.”²¹⁵ Unfortunately, the damage done to Indonesia’s forests by this ill-conceived program is largely irreparable, and its legacy of conflict continues to intensify.

4. Burning Down the House: The Forest Fires of 1997–1998

One of the most visible results of the 30-year spiral of forest mismanagement and plunder described above was the outbreak, in 1997 and early 1998, of some of the worst forest and land fires that the world has ever seen. In mid-1997, the ongoing processes of deforestation in Indonesia coincided with a particularly severe occurrence of El Niño—the climatic phenomenon that periodically visits drought upon Southeast Asia—to spark massive fires that caused damages conservatively estimated at nearly \$10 billion (see Table C10), burned nearly 10 million hectares (see Table C11), and shrouded much of Southeast Asia in “haze” for a period of months.²¹⁶ Tropical moist forests do not ordinarily burn, even under severe drought conditions. But the forests in much of Indonesia have been degraded to the point that they have transformed from a fire-resistant to a fire-prone ecosystem.

It was clear by early 1997 that it would be an El Niño year in Indonesia, but despite warnings from the Environment Minister, burning, primarily to clear land degraded forest land and scrub for industrial agriculture, continued across vast areas of Sumatra and Kalimantan. The use of fire for land clearance is not restricted to Kalimantan and Sumatra—and fires were reported from 23 of Indonesia’s 27 provinces in 1997–98—but the large number of fires set on those two massive islands by plantation firms and government projects clearing tens of thousands of hectares at a time produced enough smoke by July to create a blanket of haze that spread hundreds of kilometers in all directions. Deliberately set fires in grasslands and scrub lands escaped into adjacent logged forests that burned with greater intensity. The fires eventually reached drained peat swamps, where fires burned beneath the surface long after above ground fires exhausted their fuel supplies.

Large scale burning has produced persistent haze over large areas of Sumatra and Kalimantan during every dry season, but the haze normally dissipates in September when heavy rains extinguish the fires. This was not the case in 1997 when the rains failed, the fires intensified, and the haze thickened and spread to neighbouring countries. Haze reached Malaysia and Singapore in July, and air quality deteriorated dramatically in September, triggering an outburst of complaints that drew global media attention. By late September, approximately one million km² were haze-

Table C10. Summary of the Economic Cost to Indonesia of the 1997–98 Fires and Haze

Sector	Estimated economic losses (USD millions)		
	Minimum	Maximum	Mean
Agriculture			
Farm crops	2,431	2,431	2,431
Plantation crops	319	319	319
Forestry			
Timber from natural forests (logged and unlogged)	1,461	2,165	1,813
Lost growth in natural forest	256	377	316
Timber from plantations	94	94	94
Non-timber forest products	586	586	586
Flood protection	404	404	404
Erosion and siltation	1,586	1,586	1,586
Carbon sink	1,446	1,446	1,446
Health	145	145	145
Transmigration and buildings and property	1	1	1
Transportation	18	49	33
Tourism	111	111	111
Fire fighting costs	12	11	12
Total	8,870	9,726	9,298

Source: National Development Planning Agency (BAPPENAS), 1999. Final Report, Annex I: Causes, Extent, Impact and Costs of 1997/98 Fires and Drought. Asian Development Bank Technical Assistance Grant TA 2999-INO, Planning for Fire Prevention and Drought Management Project.

covered, affecting about 70 million people. Land, air, and sea transport accidents were linked to the poor visibility caused by the haze, including a ship collision in the Straits of Malacca that killed 29 people. Hospitals and clinics were filled with people seeking treatment for a variety of respiratory, eye, and skin ailments. Schools, businesses and airports closed, and tourists stayed away, inflicting severe economic hardship on the region.

By comparing satellite images of fire “hotspots” with land use maps, the government determined, in September, that the majority of the fires were occurring in timber and oil palm plantation areas—although small farmers were also implicated as well—and the government announced a total ban on burning, followed by threats to punish offending firms. Even as fires burned out of control into surrounding forests, peat swamps and agricultural lands, however, plantation owners and farmers started new fires to take advantage of the extremely dry conditions, causing the haze to intensify and spread further, resulting in health alerts and transportation disruptions across the region.

Efforts to put out the fires, even with assistance from Malaysian volunteers and fire suppression aircraft from Australia and the United States, were largely ineffective. Poor coordination (especially between air and ground operations), lack of equipment, lack of funds, insufficient training, lack of water, and the remote location of many of the fires were often cited as the reasons for failure. Aerial suppression by water bombers was also hindered by the lack of accurate land cover maps and infrastructural support, and land-based efforts were impeded by the reluctance of many rural people to fight fires on land that was not theirs. The number of fires began to decline during October and November, probably partly due to mounting pressure exerted by the government on plantation firms but also because these firms had burned as much land as they needed by that time. Peat swamps were still burning in late November, but were partially extinguished when rain finally began to fall in December.

The rainy season, which usually lasts at least six months in western Indonesia, began to taper off in less than two months. By the end of January 1998, hundreds of hot spots again appeared on NOAA satellite images, as the drought carried over into a second calendar year and rainfall cycle. The pattern of 1997 was repeated in the coastal swamps on Sumatra’s east coast from January through April, while in Kalimantan the fires were concentrated in East Kalimantan—a province that had escaped extensive burning in 1997 (although it had been the site of Indonesia’s worst previous fire incident, during the 1982–83 El Niño event). The drought was also beginning to cause food shortages due to below-normal harvests and total failure of the rice crop in some areas. The plight of rural communities already reeling from the effects of the fires, haze, and drought was worsened by the growing economic impact of the dramatic devaluation of the Indonesian currency over the second half of 1997. Farmers began to clear even more land by burning in the hope that they could increase the next harvest to offset 1997 drought losses. Fears also arose that forest exploitation and related burning would increase as firms tried to offset the effects of the economic crisis.

Fires continued to spread during the month of March. Efforts to fight fires were hampered by the increasing scarcity of water as the drought caused surface water to dry up and the ground water level to sink beyond the reach of wells. Haze once again blanketed Singapore and parts of Malaysia, and the fires did not end until heavy rains finally arrived in mid-May.

Analysts have encountered considerable technical difficulties in precisely determining the total area burned during the 1997–98 fires, and in estimating what kinds of vegetation types burned in which areas. Based on the most recent analyses, however, it seems certain that at least 9.5 million ha burned (see Table C11). The extent of the area affected by air pollution from the fires has been easier to determine. Indeed, the international news media were initially attracted to the 1997 fires by the dramatic spectacle of a “thousand mile shroud” spreading over an area of 1 million km² where hundreds of millions of people live. Accurate analysis of the health impacts, however, has also proven difficult.

The cross-border nature of the disaster initially created some expectation that the neighbouring countries of the Association of Southeast Asian Nations (ASEAN) would relax their general policy of non-interference in members’ “internal affairs” and take some collective action to force Indonesia to act more effectively to prevent future fires. But despite public anger and a number of pronouncements by Malaysian and Singaporean politicians, it appears that neither these two countries—both greatly affected by the 1997–98 haze—nor ASEAN as a regional organization are going to press forcefully for change in Indonesia. At least not until the next massive outbreak of fires and haze.

Harwell has pointed out that the 1997–98 fires were unique not only in their extent and impacts, but also because of the way in which their causes, impacts—and resulting prescriptions for combating them—became a battleground for conflicting representations of reality about Indonesia’s forests.²¹⁷ Many (but not all) in the government blamed “nature,” which had visited such a severe El Niño drought on the country—thereby dismissing the role of 30 years of forest mismanagement. Donor agencies—which launched some two dozen fire-related projects in 1998—tended to take a safely “apolitical” and technical view of the problem and the solution: what was needed was more coordination meetings between officials, more training in fire-prevention and firefighting techniques and, above all, more remote sensing and GIS “capacity-building.” And assessments of the damages—almost all funded by donors—focused on quantifiable economic costs, effects on orangutans and other elements of forest biodiversity, and efforts to determine, by use of sophisticated satellite analyses, the location and extent of fire impacts. Regional discussions in the Association of Southeast Asian Nations (ASEAN) took on a similar tone, “an approach to the fires as an event, not as a symptom of a larger problem, and the

Table C11. *Estimated Extent of Spatial Damage by Fire in 1997/98 (ha)*

Island	Montane forest	Lowland forest	Peat and swamp forest	Dry scrub and grass	Timber plantation	Agriculture	Estate crops	Total
Kalimantan		2,375,000	750,000	375,000	116,000	2,829,000	55,000	6,500,000
Sumatra		383,000	308,000	263,000	72,000	669,000	60,000	1,756,000
Java		25,000		25,000		50,000		100,000
Sulawesi		200,000				199,000	1,000	400,000
Irian Jaya	100,000	300,000	400,000	100,000		97,000	3,000	1,000,000
Total	100,000	3,283,000	1,458,000	763,000	188,000	3,844,000	119,000	9,756,000

Source: National Development Planning Agency (BAPPENAS), 1999. Final Report, Annex I: Causes, Extent, Impact and Costs of 1997/98 Fires and Drought. Asian Development Bank Technical Assistance Grant TA 2999-INO, Planning for Fire Prevention and Drought Management Project. (April.)

emphasis on high tech remote surveillance rather than proximal (field-based) approach to data collection and remediation.”²¹⁸

Very little attention was paid to assessing the views of and impacts on the rural people of Kalimantan and Sumatra who were most affected. For them, the “disaster” that caught the world’s attention in 1997 had actually begun long before, with the systematic expropriation and destruction of forest resources chronicled above. The fires, catastrophic as they were, were the logical continuation of that process.

In April 2000, Indonesia’s environment minister promised his counterparts from neighbouring countries a “haze-free year.”²¹⁹ By July 2000, however, fires were burning again in Sumatra, and the haze had crept over the Malacca Strait to Singapore and Malaysia,²²⁰ thick smog temporarily closed the airport at Medan (Sumatra’s largest city),²²¹ the Indonesian government was reported to have “no plan” to fight the fires,²²² and indeed no fire suppression activities were being undertaken or suspects being arrested.²²³ With a “haze-free year” apparently not on the horizon, the State Minister of Environment told the press that he was “really ashamed every time my counterparts from Malaysia and Singapore call me to complain about the haze coming from Sumatra,” and blamed the burning on plantation companies engaged in “organized crime which often involves government officials and military officers.... Many companies feel free to burn because government officials or military officers back their activities.”²²⁴

This most recent outbreak of fires and haze is only the most visible manifestation of a disturbing reality: despite the change of regime and the clamor for *reformasi* in the forestry sector, forest policy and management practice has changed very little since 1998.

5. Forest Resource Scarcity and Civil Conflict in Indonesia

5.1 Forest-Related Conflict in the Suharto Era

During the mid-1960s, Indonesia was among the poorest nations in world, with a per capita income of just \$50 and its economy in shambles. During his three decades in power, Suharto utilized exploitation of the archipelago’s rich natural resources—primarily oil, timber, and minerals—to jump start and sustain a process of economic development that the World Bank praised in 1994 as “one of the best in the developing world.” Per capita income rose from \$50 in 1967 to \$980 in 1995, and poverty was cut from 60 per cent to an estimated 15 per cent of the population.²²⁵

Exploitation of forest resources played a significant role in fueling Indonesia’s rapid economic development. But the profits from logging and other forest industries flowed largely to a small coterie of elite Suharto

cronies and their patrons in the government, as discussed previously. Meanwhile, the costs of Suharto's forest policy were borne largely by local and indigenous communities—and by the country's vast assemblage of species of forest plants and animals. Centuries-old systems of customary rights over forests, and traditional resource management systems were swept aside in the name of “development” and under the authority of national laws that arrogantly declared that the central government “owned” the 75 per cent of the nation's land area legally designated as “forest land.” Local communities were barred from the forest resources they had so long depended on, and the forests themselves were recklessly logged and cleared, causing massive erosion, flooding and drought in many areas, and period forest fire catastrophes.

The rapid expansion of timber and oil palm plantations in the 1990s, detailed previously, also led to numerous conflicts with local communities. While the impacts of logging concessions on local communities can be quite onerous, people are still able to retain some access to forest resources in the concessions. Plantations, however, and the clear-cutting that accompanies them, impose a much greater level of deprivation on communities who depend on the forest areas in question for livelihood resources.²²⁶

The transmigration program was also a catalyst for conflict in the Suharto era. Many of the massive transmigration sites, located in formerly forested areas wholly unsuited for agriculture, became massive plains of hard-baked laterite soils and *alang-alang* grass (*Imperata cylindrica*)—rural slums baking in the tattered remains of the rainforest. Coming from completely different cultures than the local residents, and forced by frequent agricultural failure to compete with local residents for adjacent forest resources, transmigrants often fell into conflict with local communities. As the futility of farming annual crops on these sites became evident—and as programs to develop timber and oil palm plantations gathered steam in the early 1990s—many transmigration sites were officially linked to plantation schemes, to provide cheap labour for the plantation companies.

It is not surprising that conflicts between local forest-dependent communities and outsiders—logging and plantation companies, mining operations, and transmigration sites—became an endemic feature of Indonesia's forest areas in the 1980s and 1990s. Such conflicts were inevitable given the vast scope of New Order forest enclosure and resource appropriation in a context where tens of millions of rural people depend on forest resources for their livelihoods.

These conflicts were not, however, a sign of organized political action to unite aggrieved peasants and restore a more equitable balance of forest resource access and control. Some local protests involved physical action by local villagers (such as tearing up plantation seedlings or burning log-

gers' basecamp buildings), but such was the strength of the Suharto regime that it was able to repress and contain these simmering conflicts and grievances. That capacity was, however, dependent on a particular set of circumstances: abundant natural resources; continued economic growth and poverty reduction; a unified and heavy-handed military intelligence and domestic security apparatus which largely accepted and served the objectives of state policy; the transformation of the electoral process into a state-controlled mechanism for reinforcing its legitimacy; a quiescent and depoliticized peasantry and urban workforce; a small (until very recently) middle class willing to accept authoritarian politics in exchange for growing wealth; and the continuity of Suharto's 30-year rule.

These conditions all changed precipitously with the fall of Suharto, the onset of economic crisis, and the ensuing political turmoil and breakdown of civil order that endures to this day. Formerly abundant, forest resources are increasingly scarce. Relatively strong in the Suharto era, the Indonesian state is now weak and in disarray. And the formerly quiescent peasantry and urban workforce is increasingly politicized and, in more and more cases, violent in pursuing its grievances. As a result, conflicts over forest resources have increased in number and intensity by an order of magnitude.

5.2 Forest Resource Conflict in the Post-Suharto Era

Indonesia has become a conflict-ridden society since 1997. From the massacre of ethnic Chinese in May 1998 and bloody religious and ethnic riots and warfare in Kalimantan, Sulawesi and Maluku to the violent separation of East Timor in 1999 and the ongoing civil war with separatists in Aceh, much of Indonesia has become a violent and dangerous place. This is important to remember in evaluating conflicts over forest resources: even if forest resources were abundant, well-managed, and equitably distributed, there would still be a very high level of violent conflict in many parts of the country. But at the same time, it cannot be denied that forest resource scarcity—particularly structural scarcity—has become an important flashpoint for social unrest and civil conflict, and that the sharpening fissures in Indonesian society are providing the spark to set off smoldering tensions over forest resources. As a result, conflicts have broken out over virtually all types of forest resource and resource use.

Logging Concessions and Illegal Logging

Logging concessions, as already noted, have long been a source of tension and occasional conflict between logging firms and the state on the one hand, and local communities on the other. What has changed is the degree and intensity of those conflicts: In March 2000, the Association of Indonesian Forest Concessionaires (APHI) reported that 50 timber companies which control about 10 million ha of logging concessions in Papua

(Irian Jaya), Kalimantan and Sulawesi, have stopped their logging activities due to growing conflicts with local residents, who not only claim ownership of the firms' concessions, but also often threaten the workers.²²⁷

In the Suharto era, such local impertinence was usually dealt with rapidly and violently by police or military personnel "rented" to logging firms. Currently, however, the companies find themselves increasingly on their own: the thinly-stretched military, dealing with large-scale violent conflict in numerous parts of the country, lacks the resources to respond to these concession conflicts. The Forestry and Plantations Ministry has softened its tone on such local protests, even admitting that logging firms may be to blame. And the fact that most of the concessions where conflicts are occurring have been linked to members of the Suharto family and inner circle—and hence are said to have been obtained through corruption—means that few officials are eager to spring to their defense.²²⁸ But despite this change in attitude, the government seems to have no plan for resolving these concession conflicts (there is no specific mention of dealing with them in the Ministry of Forestry and Estate Crop's 2001–2005 Strategic Plan, for example, although the general problem of local grievances is acknowledged), and the Ministry admitted in early 2000 that it was unaware of the specifics of the ongoing conflicts.

Illegal logging has become endemic throughout Indonesia, as noted above, and is both a cause and a result of conflict over resources. It causes conflicts with local communities where illegal logging operations steal timber in their areas, but it also gives rise to conflicts within communities, where some people are employed by the illegal logging operations—and thus benefit—while others suffer the impacts, such as diminution of local water supplies, increased erosion, and more frequent forest fires—either set deliberately to hide evidence of illegal cutting, or caused by increased fuel loads of downed waste material.

Illegal logging is also the result of forest-related conflicts. When the status of a particular area is contested or unclear (such as a logging concession where local protests have stopped operations), it becomes an easy target for illegal cutting. And where local communities feel unjustly deprived to access to forest resources, they may often retaliate by "stealing" timber—timber that they feel is actually theirs.

The dynamic of forest fires is similar to that of illegal logging. Fire is used as both an offensive weapon by firms seeking to displace local claims over land they want for plantation development, and as a defensive weapon by local communities. And both the risk and hazard of fires increases in areas where ownership and control are contested, giving the areas an "open access" character. Fire is thus both a weapon and a result of conflict over forest resources.²²⁹ Indeed, the use of fire as a weapon by local communi-

ties has a long tradition, extending back to local resistance to teak plantations established on Java in the nineteenth century.²³⁰

Oil Palm Plantation-Related Conflicts

The rapid development of oil palm plantations on forest lands has been a major source of conflict with local communities, particularly in Sumatra and Kalimantan. Reports on these conflicts follow a similar pattern. (1) Land on which local communities have longstanding claims and are often growing tree crops or harvesting non-timber forest products, are allocated to a company without consultation with the community. (2) People protest to the company and local officials, and often the company makes promises of compensation, participation in the plantation scheme, or other enticements. (3) The company does not honor its promises and the community again protests to local government and company officials. (4) Nothing is done to meet their demands, and local people take action, destroying or confiscating equipment and vehicles, occupying basecamps, preventing plantation staff from working, and the like. (5) The company hires local police or military (sometimes dressed in the “black ninja” outfits that have become popular with hired thugs and assassins on Java) to retaliate, and more violence ensues. Some typical cases from around the country include the following:

- *South Tapanuli, North Sumatra:* On August 3, 1998, hundreds of villagers from Ujung Gading Jae village clashed with PT Torganda, a company that had been allocated a large area of customary (*adat*) land for oil palm development, without the consent of the traditional owners. Two villagers were wounded and a bulldozer was burnt. The clash came after local farmers had ambushed plantation workers in the process of destroying an area of land planted with fruit trees by the community. The company was accused of ordering its employees to burn villagers’ land and houses in retaliation—over 100 houses and lands in three villages were burnt.²³¹
- *Muara Pahu, Jempang and Bongan, East Kalimantan:* In December 1998, villagers in an area being developed for oil palm by PT London Sumatra (LonSum) seized heavy equipment, including bulldozers and trucks, and set fire to part of the company’s basecamp, destroying two office buildings, a fertilizer store and worker accommodations. This incident came after residents of nine villages had presented the company, a month earlier, with a demand for \$25 million in compensation for losses of land and crops, and damage to traditional burial sites. Villagers continued to occupy the base camp until May 1999. On May 7, armed forces—allegedly paid by LonSum—forcibly ejected the villagers. 12 villagers were arrested, four people disappeared, and the deaths of two others is thought to be linked to the incident.²³²

- *Senangan and Lae Butar, Aceh*: Local communities complained in 1997 that PT Socfindo acquired their land without permission and did not pay any compensation, and demanded that the land be returned to them. The company alleges that two of its staff were tortured and three seriously beaten by villagers in January 1998, and has accused the local community of destroying palm plantations and staff houses. The armed forces have since entered the situation—allegedly paid by the company. Several villagers have been killed in resulting clashes.²³³
- *Lubuk Linggau, South Sumatra*: In this area, Boustead Holdings is accused of planting oil palm on customary (*adat*) land without adequate compensation. The community demanded that the land, already planted with oil palm, be returned. The company refused. In March 1998, villagers occupied the company's base camp, confiscated machinery, and burnt some plantations and vehicles. They remained occupying the base camp for 45 days, until they were forced off by estate workers who claimed that the occupation was keeping them from working (and therefore getting paid). The company has tried to organize meetings with local government officials to try and settle the issue, but the government has done nothing and the company has suspended further planting until the future status of the land is clarified.²³⁴

Timber and Pulp Plantation-Related Conflicts

Timber plantations and pulp processing factories have been another important source of recent conflicts, generally similar in cause and form to those involving oil palm plantations. In September 1998, for example, local people in Lampung province (southern Sumatra) occupied a timber plantation area under the concession of PT Dharma Hutan Lestari in Tanjungbintang. Thousands of farmers cut trees, piled them at several locations on road sides and then sold them.

The case of PT Indorayon Inti Utama (PT IIU) in North Sumatra is a particularly bitter and violent conflict that has attracted considerable attention, revolving around a massive plantation and pulp factory complex near Lake Toba, Southeast Asia's largest lake. The company, which is part of the Raja Garuda Mas conglomerate, obtained a logging concession and established a pulp processing operation in the late 1980s, and almost immediately fell into violent conflict with the local Batak people. Local complaints ranged from the forcible takeover of traditional lands without compensation to erosion and air and water pollution. In one incident, the company took a group of local women to court for tearing up seedlings in areas the community claimed as their traditional land.

The situation really heated up as the operation expanded during the 1990s, building a \$600 million pulp mill in the town of Porsea (overlooking Lake Toba), owned by Asia-Pacific Resources International Ltd. (APRIL), a Singapore-based holding group (Raja Garuda Mas holds a minority stake) and expanding PT IIU's concession holdings to 269,000 ha. Within weeks of Suharto's resignation, hundreds of villagers angry over pollution, deforestation, and uncompensated land claims occupied and shut down the facility, burning 12 company vehicles, two warehouses, and six houses. In the words of one farmer guarding the road, "any truck passing will be stoned and maybe burned. This is war." The company made some attempts to negotiate with the community, but all failed, and the mill hardly operated at all from mid-1998 until present, while violence has flared repeatedly. In March 1999, after police used force to lift the blockade, four company employees were kidnaped, three of them killed. The president at the time, B.J. Habibie, ordered the plant closed for two weeks for an environmental audit. No audit has been done, however, and the plant remains closed at present writing, despite President Wahid's May 2000 order that the plant be partially reopened.

Reflecting the situation in many conflict-ridden corners of Indonesia, the President's order appears to be unenforceable: neither provincial nor central officials have the political will or the ability to carry out the decision by force—which appears to be the only way the plant will be opened. The situation remains tense (there was more violence, and one death, in June), and opponents are in no mood for compromise. In the words of one local farmer, "everything that company says is bullshit. If the government tried to force it open, it will be total war." The Minister of Industry and Trade lamented that "this case is one of so many time bombs left by the [Suharto] government. Whatever decision there is, it's going to be messy." Meanwhile, the company has fallen on hard times, with its market capitalization listed at only \$25 million (it was closer to \$1.5 billion in the 1990s), and some \$400 million in outstanding debt.

In late 2000, the company reorganized under a new name (PT Toba Pulp Lestari) and voiced hopes that operations would resume in the near future, under "a new paradigm to avoid negative impacts on the environment and the health of the people." Shortly thereafter, the governor of North Sumatra ordered military troops to guard the facility, generating a renewed bout of local criticism from the many locals and environmental activists who remain committed to the plant's final closure. In the words of one local spokesman, "It seems as if the governor pays little attention to the social and environmental problems caused by the company's operations. If people from the grassroots level are not involved in negotiations, a new riot will break out in the near future." The situation remains tense and unresolved.

The much-publicized case of the Bentian Dayak people of East Kalimantan and their conflict with a timber plantation project of a company owned by Suharto crony Mohamed “Bob” Hasan is another noteworthy case that illustrates the dynamics of timber plantation conflicts. This case, however, offers at least some hope that change is possible in the post-Suharto era. A logging concession had operated in the area in question, Jelmu Sibak, since the 1980s, occasioning many complaints from the local community (over forest and crop destruction), but never provoking violent conflict. Originally held by the U.S.-based company Georgia-Pacific, it was acquired by Hasan’s Kalimanis group in the 1980s. In the early 1990s, Hasan’s company PT Kalhold Utama began development of a timber plantation-transmigration site on Jelmu Sibak traditional lands, destroying trees and crops and bulldozing traditional grave sites. Through their traditional leader, L.B. Dingit, the local people protested to local and national government officials, and sought the assistance of national and international environmental activists to press their case. Development of the plantation continued, however, accompanied by growing threats and intimidation from security personnel. A legal case was brought against Mr. Dingit in 1993—for allegedly falsifying signatures on a letter to government officials—and intimidation continued during the ensuing years, including perpetual legal harassment and repeated “field investigations” intended to scare the villagers into dropping their complaint. Meanwhile, Dingit received the prestigious Goldmann Environmental Prize in 1997 for his leadership of the resistance to the plantation, heightening national and international scrutiny of the conflict. Dingit’s “forgery” case was finally heard in 1998 (over nearly six months and 36 court sessions), and in September of that year, he was completely exonerated, with the judge stating in his decision that in the new climate of reformasi, customary law and territories must be respected under Indonesian law. It seems likely that international scrutiny, and the ill-repute into which Mr. Hasan had fallen with the resignation of his patron from the presidency— influenced the judge, who cited the Goldmann Prize as evidence backing up Dingit’s defense. At present writing Mr. Hasan is facing multiple corruption prosecutions, his company is in receivership, and the Bentian Dayak can fairly be said to have won their case. The case is an exception—indigenous peoples rarely win such cases—but it illustrates the possibility that conflicts of this kind can be resolved—in theory—by Indonesia’s legal system, even when they are as longstanding and bitter as this one.

In Sumatra’s Riau province, representatives of 439 families brought a similar case to the provincial legislature in March 2001, demanding \$17 million in compensation for 1,700 ha of land taken over by PT Riau Andalan Pulp and Paper since 1992. In testimony before a legislative committee, the locals testified that the land takeover was without their consent or pay-

ment of any compensation, and that their protests invariably suppressed by the military. In 1997, the frustrated villagers blockaded all of the company's plantation access roads, triggering a violent melee with local police in which scores were injured. An attorney for the group spent three years in jail on charges of organizing illegal demonstrations as a result. This case shows that local communities seeking redress for illegal takeovers of their forest and agricultural lands are at least willing to try utilizing existing dispute resolution mechanisms. If the legislature does not provide relief, however, it is likely that they will once again return to the barricades.

Conflicts Related to Transmigration Sites

In recent years most transmigration sites have been linked to development of oil palm or timber plantations, as noted above (Lubuk Linggau in South Sumatra, for example—one of the oil palm conflicts noted above—is a major transmigration site). But the development of a transmigration site adds an ethnic/regional, and sometime religious, dimension to conflicts over land and forest resources. Many conflicts at transmigration sites are outwardly “ethnic” conflicts between local communities and the Javanese migrants—but access to forest lands and resources is almost always a significant element of what they are fighting over. In case after case, indigenous inhabitants and transmigrants have clashed, sometimes bloodily.²³⁵

As ongoing moves towards greater regional autonomy take hold, local governments are opposing moves to send new transmigrants to their regions, and the program appears to be winding down. As the *Far Eastern Economic Review* reported in March, 2000:

Haunted by past mistakes and allegations of corruption, the transmigration programme was dealt its final blow by the birth of regional autonomy. Local districts are anxious to spend money on their native poor, rather than help outsiders. In some areas, the political backlash has also been coupled with terror, with nearly five thousand transmigrant families fleeing danger in Aceh, the Moluccas and East Timor.

In the coming year, the government will dispatch no new transmigrants, and officials admit it's the end of an era for a programme that was once a bedrock policy of former President Suharto. “We will be perceived as succeeding if there is no more transmigration programme,” says Alhilal Hamdi, minister for transmigration and population.²³⁶

But ending the program, welcome as that may be, does not solve the problems at already-established sites. The savage violence brought to bear by local Dayak people on Madurese transmigrants in Central Kalimantan during early 2001, in which at least 500 people were killed (many by

beheading and disemboweling) is a chilling reminder of the future conflicts that this misguided program will continue to provoke in the near future. And, as previously noted, conflicts over forest lands and resources is very much at the heart of the carnage in Central Kalimantan, and are in large part a legacy of this disastrous social engineering scheme. Ironically, transmigration was often promoted in the 1980s as a way to relieve resource pressures, overcrowding, and resulting scarcities and conflicts on Java, Madura and Bali. Instead, it has brought environmental destruction and savagery into the heart of Borneo and many other forested parts of Indonesia.

Conflicts Related to Protected Areas

Some 23.3 million ha of forest lands in Indonesia have been designated as national parks and nature reserves, although resources to run the system have always been meager, and effective protection has been sporadic. Many protected areas have long been encroached on by small farmers, poachers, and illegal loggers, and parts of some protected areas have been illegally converted to plantation agriculture.²³⁷ Since 1998, however, encroachment into protected areas has increased dramatically, as is the case with Central Sulawesi's Lore Lindu National Park, where locals have taken over thousands of hectares in Central Sulawesi's Lore Lindu National Park to plant cash crops and cut timber.²³⁸ Similar occupations have been reported at Kutai National Park in East Kalimantan.²³⁹ Organized illegal logging has been well-documented in Aceh's Leuser National Park and Central Kalimantan's Tanjung Puting National Park,²⁴⁰ and is widely thought to be widespread in many others.

Encroachment, illegal logging and poaching in protected areas has not given rise to much violent conflict, however, for the simple reason that such activities are for the most part unopposed by park management officials or other government agencies. One striking exception has been the Leuser Development Programme—a large European Union-funded project to conserve Leuser National Park and its surrounding ecosystem in Aceh Province—which has actively opposed (and in some cases, triumphed over) illegal park conversions to oil palm, and encroachments by logging concessions, illegal loggers, local government plans to build roads through the park, and planned transmigration sites on its boundary.²⁴¹ While not leading to violence, the program's efforts have created a great deal of heated local opposition and protest from some quarters. Should Indonesia decide to take protection of its national parks more seriously—and should the international community decide to seriously fund such an effort—these kinds of tensions would very likely explode into violent confrontations in many protected areas.

6. Forest Policy Reform: The Key Issues

In the *reformasi* euphoria following Suharto's resignation, many felt that at least fundamental changes could be undertaken that would slow deforestation, restore a measure of justice and honesty to resource management, and ameliorate the growing levels of conflict (See Box 3A). The substantive reforms needed in Indonesia's forestry sector have been widely discussed for at least a decade, and there is general consensus of what needs to be done. Box 3B summarizes some of the more widely discussed and supported forestry sector reforms. Few of these sectoral reforms have been implemented since 1998, however, despite much talk. And no progress has been made in addressing the more fundamental reforms needed to change the structures of economic privilege, political power, and governance that lie behind Indonesia's forest crisis and the conflicts it has engendered. Key unresolved issues include the following:

Who Should Make Forest Policy and Reaps Its Benefits: Jakarta or the Regions?

The basic division of authority over forests between central and provincial governments has been left in limbo. With regard to the basic authority to decide what is and is not forest land and what it may be used for, a 1992 spatial planning law²⁴² gave provinces the right to make these basic land use planning decisions—although this contradicted the 1967 Basic Forestry Law. The revised Basic Forestry Law of 1999, however, specifies that the central government retains the right to “determine the forest estate” and “plan the use of the forest,” and need only “pay attention” to the local land-use plans made under the 1992 law. On the other hand, two 1999 laws on regional autonomy²⁴³ seem to shift significant power over natural resources to the regions, specifying, for example, that 80 per cent of state income from resources (including forests) shall go to the regions. Both laws still lack implementing regulations, however, and “many lawyers and government officials regard these laws as essentially inoperable.”²⁴⁴ Meanwhile, a senior official of the agency charged with implementing the regional autonomy laws publicly accused the Forestry Minister of opposing and “rejecting” autonomy on the grounds that regional authorities are incompetent to manage forestry affairs. “The key issue,” said the official “is whether the forestry ministry is ready to hand over all the benefits it has enjoyed so far,” adding that the ministry had in the past been a “fertile” ground for corruption.²⁴⁵

Given the increasing levels of regional frustration with the “great sucking sound” of Jakarta's longstanding appropriation of resource rents, and the growing strength of separatist movements in some key resource-rich provinces (Aceh, Irian Jaya, Riau), resolution of this key issue seems crucial to maintaining a functional system of management over forests and

other natural resources. And failure to resolve it could become a spark for violent separatist uprisings in the near future.

What About the Rights and Interests of Local and Indigenous Communities?

Rhetoric about the need to manage forests in the interests of traditional (*adat*) and other local communities has been pervasive for several years, but from a legal and policy perspective, very little has changed since the Suharto era. Numerous analyses have attempted to glean openings for developing a more local community-oriented forest policy from the spate of new laws and regulations, and there are some hopeful changes around the edges. But the basic structure of power over forest lands remains as it has always been: the state controls the forest and all who would use it may do so only by leave of the state.

Box 3A: Forest Policy Reform Efforts Since 1998

There has been much talk about forest policy reform since Suharto's fall in 1998 and a flurry of new regulations have been enacted, but little has been done that will effectively address the spiral of forest loss and social conflict described in this paper. Pressures for reform are strong, however, and have arisen from six principal sources:

- Reform of the forestry sector is viewed as a fundamental part of the larger movement to eradicate "corruption, collusion and nepotism" (usually termed "KKN," its Indonesian acronym) that characterized the Suharto regime. According to official data, more than 80 per cent of the country's forest production areas are controlled by the family and close friends of the former president.²⁴⁶
- The IMF-led international economic aid program for Indonesia that was initiated in early 1998 in response to the economic crisis contains a number of forest policy conditions, mostly related to increasing competition and economic rationality within the logging concession and timber pricing and marketing system. Maintaining this economic lifeline has thus depended, in part, on at least formal enactment of the donors' forest-related demands.
- The growing clamor for greater regional autonomy by Indonesia's provinces—particularly those that are rich in natural resources—implies a significant shift in the balance of power between the central government and provincial and local government units with respect to natural resources, including forests. Indeed, the very legitimacy of the central government to make forest policies and monopolize forest rents has been called into question by many proponents

of regional autonomy, and “reform” is equated in many minds with rapid decentralization.

- The growth of a more democratic political environment has given non-governmental organizations (NGOs) and the press greater political space to expose illegal logging and other malfeasance in the forestry sector, and to call for major reforms. NGOs, academics and the press now regularly make statements about forest policy that would have resulted in a prison sentence or worse during the Suharto years.
- The disastrous forest fires of 1997–98 created additional international and domestic pressure to reform the poor logging and land conversion practices that were a root cause of the conflagration.
- Finally, many local and indigenous communities—nursing decades-old grievances against the central government and the private sector forest industry firms allied to it—are not waiting for the policy-makers’ reforms, and are taking matters in their own hands through land occupations, strikes, and destruction of logging and plantation facilities.

Given these pressures, there was a considerable amount of optimism at the outset that forest policy reform would move forward rapidly, and numerous forest policy reform committees and working groups were set up, including an official National Committee on Forest Policy Reform. By 2000, however, the momentum had slowed, for essentially two reasons. First, the fall of Suharto did not greatly affect the structure of production or power in the forestry sector. While it has become *de rigeur* for even the most venal Suharto-era forestry bureaucrats to trumpet their commitment to *reformasi*, confronting a pervasive and entrenched system of privilege and corruption has been quite another matter. As a World Bank internal memo warned as early as September 1998:

There remains a strong element in the forest industry, and in the official forestry agencies, that will resist reform, or at best will give it token acceptance while attempting to preserve the privileges of the past. All that can be said, at this point, is that the political predominance of an industry based on vested interest and institutionalized market distortion can now be seriously dealt with, in a manner that was not previously possible.²⁴⁷

Second, the capacity of the government bureaucracy to actually *manage* forests —let alone reform their management, has always been quite weak. In the Suharto era, the forestry bureaucracy essentially administered a vast network of patronage and corruption, while actually forest resource extraction was managed (poorly) by private sector conglomerates, backed up by military force (usually paid for by the companies)

when necessary. The state's capacity to effectively and even-handedly implement policies and laws and provide real oversight of resource management in the field, however, is virtually nonexistent.

As a result, Indonesia now has a wealth of new "reform" policies, laws and regulations—"reform on paper." But a quick look at what has actually been accomplished in the areas most needing reform shows that "reform in action" has been a failure.

Legal and regulatory changes since 1998 are embodied in numerous decrees and laws, culminating in a new Basic Forestry Law (Law No. 41 of 1999), rammed through the parliament during the waning days of the transitional Habibie government in the face of fierce opposition from virtually all reformist elements. The most specific provisions of the Law codify regulations issued during the previous year to satisfy the demands of the IMF and World Bank, largely embodying changes in the logging concession system that the World Bank had been pushing for since the early 1990s. Other provisions enacted by the government limit the size of logging and plantation concessions, limit the area that any one company may be granted, and favours participation in concession ownership by cooperatives and small and medium enterprises in various ways.²⁴⁸

Some analysts (including the author) believe, however, that this "sustainable logging" policy package that the World Bank and IMF are promoting will not reduce deforestation even if implemented, and is in any case unlikely to be implemented beyond issuance of decrees and regulations.²⁴⁹ One of the greatest flaws is its assumption that most logging in Indonesia is carried out on selectively-logged concessions. As shown elsewhere in this paper, however, most of Indonesia's timber supply comes from illegal logging and clear-cutting of areas slated for conversion to plantations. Another flaw is the condition that restrictions on foreign investment in oil palm be lifted, a measure widely criticized as an incentive for further deforestation and forest fires (and privately disavowed by World Bank officials as "the IMF's idea.")

The 1999 Forestry Law does establish a category of customary forest (*hutan adat*), but defines it as state forest that happens to lie within the territory of a "customary law community," the definition of which is to be elaborated (by the government) in future regulations. The government is obliged under the Law to respect the rights of those communities that have received it's blessing as truly "customary," but "only as long as those rights do not conflict with national interests." In short, the government unilaterally determines which communities qualify as "customary," and then unilaterally decides which of the communities' rights to respect. It is not

surprising, therefore, that the 1999 Forestry Law has been denounced by indigenous peoples' organizations and NGOs as a worthless sham with respect to protection of the rights of traditional forest-dwelling peoples.²⁵⁰ Thus, the new law has increased—rather than reduced—the probability of conflict between the state and corporate interests on the one hand, and local and indigenous communities on the other.

Should the Production Capacity of the Forestry Industry Be Forcibly Reduced By State Action?

Illegal logging, as already noted, is pervasive in Indonesia, driven by the massive imbalance between the demand for wood from industry and the amount of wood that can be sustainably—or even legally—produced. Illegal logging is also a major source of growing conflict over forest resources, as illegal loggers denude watersheds, destroy local community's resources, and feud with legal logging operations. Logically, demand must be reduced if illegal logging is ever to be decreased. But nothing in the flurry of recent legislation even mentions demand reduction or industry downsizing. And while the 2001–2005 Strategic Plan for the forestry and plantations sector provides extensive statistics on over-capacity, reducing that capacity is not included, even in passing, as one of the goals for the sector.²⁵¹ Short-term interest in continuing to produce foreign exchange (and not scare off foreign investors)—and reluctance to confront powerful industrial conglomerates—has clearly won out over reasoned economic analysis, consideration of ecological impacts, or fear of the future social conflicts that this over-capacity will surely fan. The Trade Ministry's Director General of Forest Products, for example, is resolutely opposed to any measures to close existing mills: "We have already issued the licenses. We can't suddenly withdraw them. Investors would get scared."²⁵²

Even with regard to the country's thousands of openly operating illegal sawmills, the Trade Ministry official argues that the government has no data on their location, doesn't have the money to find out, and therefore will not move to close them. The Minister of Forestry and Plantations also endorses a lenient policy on illegal mills saying that "we need to warn them that what they are doing is illegal. If we remind them once, then twice, and they still insist on operating, only then should we take action against them." In any case, he argues that the concerns of donors and others about Indonesia's forest crisis is "a little over the top. We need to make an effort to preserve our natural resources, but we shouldn't make any hasty decisions. We don't need drastic change in our policy orientation."²⁵³

Should All Clearing of Remaining Forests be Banned?

Conversion of forests for timber and oil palm plantations has been a major source of deforestation and social conflict. But beyond formal announce-

ment of a “moratorium” on all further forest conversions until a “National Forest Plan” is completed (another commitment to the World Bank, made in early 2000), no serious action has been taken to stop forest conversion. Indeed, in June 2000 the Minister of Forestry and Estate Crops issued a decree specifying the process for conversion of forest lands for plantations, with the objective of “optimalizing the utilization of [forest] land for plantations.”²⁵⁴ No mention is made of a moratorium on conversion—indeed the regulation seems aimed at speeding up the conversion process and ensuring that concessionaires work their concessions. Neither is there any requirement that plantations be sited on degraded lands, or that either the concessionaire or the government consult with affected communities in the area.

Even if the government were taking their moratorium pledge seriously, there is clearly no need to complete another planning exercise to determine that no more forested land should be converted for plantations: The lowland rainforests most coveted for conversion are so depleted that strict legal protection of all that remain is the only scientifically defensible choice. Converting swamp forests to agriculture of any sort is recipe for economic failure and fiery disaster, as was illustrated in the 1997-98 fire episode. Hill forests are for the most part too inaccessible and steep to be viable for plantation agriculture, and are in any case far more valuable for their water catchment function. And Indonesia already has some 40 million ha of severely degraded forest land available for plantation development, by the government’s latest estimate.²⁵⁵

Meanwhile, while the government sends mixed signals about whether further clearance will be allowed, the clearing goes on in a *de facto* manner, either directly (often with the blessing of regional officials, in the name of “regional autonomy”) or indirectly (through illegal logging, which degrades the forest to the point where officials can say “its not really forested anyway.”)

Box 3B: A Forest Policy Reform Agenda For Indonesia

Inventory, stabilize, legally protect and defend the remaining forest estate.

Indonesia’s highest priority should be to complete work on a comprehensive inventory of the status of remaining natural forests, and to then take all necessary measures to preserve this area as permanent forest estate. Recommended include the following:

- Carry out an accurate inventory of vegetative cover and land uses lying within the legally-defined forest estate.
- Grant clear legal protection as permanent forest estate to all remaining natural forest areas in good condition (primary and secondary forests), and ban conversion to non-forest uses.

- Grant strict protection to all remaining primary forests in Indonesia (i.e., ban logging, mining, or conversion in all remaining primary forests).
- Stabilize the boundaries and management of the highest-priority protected areas and seek international assistance for a priority parks rescue program.

Recognize and legally protect forest ownership and utilization by indigenous and forest-dependent communities and assist them in managing the forest sustainably and productively.

Once the true forest is legally secured, a process of reordering its uses—and users—can begin in earnest. And once there is an accurate accounting of unclaimed degraded forest lands available for other uses, decisions can be made on the most efficient and equitable distribution of those areas among various stakeholders. But before any zoning or allocation takes place on these lands, the long-standing wrongs committed by the Suharto government against the rights and livelihoods of indigenous and other forest-dependent communities must be corrected. Key actions include the following:

- Legally recognize ownership of forests lying within the customary territories of indigenous and traditional (*adat*) communities, and mobilize financial and technical assistance to map these areas.
- Establish a new “community forest concession” management right that may be granted on state forest lands, and encompasses the options of selective logging for timber, harvest of non-timber forest products, and rehabilitation and plantation forestry on degraded forest lands.
- Establish effective mechanisms for independent citizen monitoring of trends and threats related to forest lands and resources.
- Strengthen and intensify the processes of multi-interest dialogue on forest policy reform that began during 1998.

Reduce Industrial Demand for Wood to the Level of Sustainable Supply by Reducing the Size of Indonesia’s Wood Processing Industry.

The imbalance between timber supply and demand is the main factor driving illegal logging in Indonesia, as well as the growing role of clear-cutting and land conversion in providing raw material to industry. Indonesia should have only as much processing capacity as can be supplied from sustainably, legally-harvested sources. This means that approximately one half or more of the existing wood processing industry capacity should be shut down. Politically impossible in most con-

texts, Indonesia is currently faced with a unique opportunity to take this bold step, due to the ongoing banking and corporate insolvency crisis, and the commanding power of the Indonesian Bank Restructuring Agency (IBRA) over many of the largest (and most corrupt) logging and wood processing conglomerates. The Indonesian government should, therefore:

- Utilize IBRA's control over the assets of insolvent timber processing firms as leverage to close down processing facilities.
- Reduce all subsidies for remaining processing facilities, to ensure that those who stay in business are operating efficiently.

Reform Logging Practices and Broaden Forest Use to Include Multiple Uses and a Wider Variety of Users.

Commercial logging, as currently practiced, threatens the degradation and eventual destruction of much of what remains of Indonesia's forests. The government recognizes the need for reform, but its current push to essentially nationalize the logging industry (by gradually putting logging operations in the hands of state-owned corporations)—touted by the Ministry of Forestry and Estate Crops as a panacea for poor concession management—is misguided and unlikely to improve concession practices. State corporations already control significant concession areas, and their performance is not significantly better than that of private companies.

But whether concessions are run by state or private corporations, there are two broad tasks to be carried out in order to transform current wasteful and inequitable utilization of Indonesia's natural forests towards sustainability and equity. First, the existing system under which timber is produced—both on legal timber concessions and illegally—must be reformed. Second, the framework for natural forest utilization needs to be broadened to encompass an ecosystem perspective and to incorporate a wider range of forest resource uses and users than has been the case. To that end, the following steps need to be taken over the next several years:

- Carry out field-level assessments of all operating logging concessions and revoke the licenses of all concession-holders who have substantially or continually violated the terms of their concession agreements.
- Change the economic incentives that encourage waste and a “cut-and-run” mentality by loggers.
- Step up the evolution of the current concession system towards Permanent Forest Management Units.

- Conduct a comprehensive economic and institutional analysis before moving hastily to turn concession management over to state-owned forestry corporations on a large scale.

Rethink and Reform the Plantation Sector.

As discussed above, the fast-growing pulp and paper and oil palm plantation sectors are exerting major pressure on the forest, and were the major culprits behind the 1997–1998 forest fire disaster. The clear delineation of the nation's permanent forest estate and establishment of its unambiguous legal protection against conversion, recommended above, are the most important first steps in restraining the destructive role that plantation development is currently playing. Key additional actions that need to be taken include the following:

- Institute a moratorium on granting of new concessions for oil palm, timber, and other plantations until a national inventory of permanent forest estate is completed.
- Ban the establishment of plantations on all but truly degraded forest lands.
- Revise the incentive structure for timber plantations to discourage the cutting of natural forest.
- Safeguard the interests and livelihoods of local communities in plantation areas.
- Strengthen rules and penalties against clearing plantations with fire.

Should Bad Debts of Insolvent Forestry and Plantation Firms Be Forgiven or Called In?

Closely linked to the issue of resolving overcapacity is the question of how Indonesia's corporate debt crisis will be resolved, an issue raised in an important analysis by Purnomo in early 2000:²⁵⁶ By the end of 1999, private firms held \$51.5 billion in outstanding debt to the Indonesian Bank Restructuring Agency (IBRA), of which \$34.3 billion is nonperforming. Forest and plantation sector activities account for about eight per cent (\$4.1 billion), about \$2.7 billion of which is estimated to be nonperforming. In addition, forest and plantation conglomerates are holding \$2.4 billion in domestic nonperforming loans related to investments in other sectors, and at least \$15 billion in outstanding loans to foreign creditors. In short, the companies which control a significant part of Indonesia's forestry and plantation sectors owe their creditors at least \$20 billion in loans which they are not making payments on.

This high level of nonperformance by forest-linked firms results from their ability, during the Suharto years, to obtain financing with minimal due diligence, either from state banks (ordered to make the loans by regime officials), or by banks owned by the conglomerates themselves, which regularly violated financial rules with impunity. Numerous subsidies from the government—not least of which being free access to forest and land resources—further skewed the calculus of profitability over the long term. As a result, many such firms have established processing operations dependent on illegal or unsustainable logging, and that have generated numerous violent conflicts with local communities, as previously discussed.

IBRA was established to restructure Indonesia's failed and highly indebted banking system, and as such has become the single most important holder or potential holder of forest and estate crop assets in Indonesia. Two of the largest conglomerates, for example—the Bob Hasan Group and the Salim Group—have been in receivership under IBRA since early 1999, and IBRA has strong legal authority to call in the nonperforming loans of most other big forest firms—and seize their assets—if they do not pay their debts to banks under IBRA's management. Thus, IBRA has the legal means and the opportunity to effectively shut down a considerable proportion of the country's excess wood processing capacity. But, indications are that IBRA will write off at least 70 per cent of the nonperforming loans held by companies under its control, which would amount to a write-off of \$1.9 billion in bad debt owed by the forestry and plantation sector alone. Such a move would provide yet another huge subsidy to these firms, squander the chance to substantially reduce production capacity with a strong legal and economic justification, and encourage the companies to continue investing in environmentally destructive and socially divisive forestry sector projects.

In summary, the forest policy "reforms" of the past several years have only scratched the surface of the problems that beset the Indonesian forestry sector and can be described, in the words of one analysis, as "reform without change."²⁵⁷ As a result, the conflicts engendered by Suharto-era forest policies have continued to grow and multiply. At the same time, the collapse of the economy, weakening of the state, and decline of peace and order have fanned these conflicts into something far more threatening to Indonesia's security than has been the case in the past.

7. Forests, Conflict and Security in Indonesia: What Can Be Done?

The spiral of forest resource scarcity and conflict described in previous sections is increasing becoming a significant threat to three important dimensions of Indonesia's security.

First, conflicts over forest resources contribute to Indonesia's eroding domestic civil peace and order, a value that lies at the core of what we generally mean by "security." People are fighting with each other in Indonesia over many things, of which forest resources are only one. But, as noted above, most of the country is defined by the state as "forest land," and many conflicts that are "ethnic" or "religious" on the surface have their roots in, or are linked to, competition for increasingly scarce forest resources. And at the same time, the country's ethnic, religious and regional tensions have the potential to inflame forest-related disputes more so than would be the case in a situation of greater ethnic and religious tolerance and harmony.

Violence and lawlessness also beget more violence and lawlessness. Many of the cases of forest-resource conflict discussed above involve local communities with legitimate grievances against the government or private companies. Unable to gain satisfaction—or even a fair hearing—for their complaints, and frequently intimidated by use or threat of state-sanctioned violence, they have taken matters in their own hands, often violently. However understandable such reactions may be, they set a precedent for looting and lawlessness by people and groups who have no legitimate grievance, but rather seek personal profit from the growing disorder. Thus, for every case of a community attacking an oil palm operator in the name of a truly just cause, there are probably 10 gangs of well organized criminals systematically looting oil palm plantations for their own benefit, and "looting of both ripe and unripe fruit reduced overall production by 10 percent" in 1998 and 1999, according to the head of the industry association.²⁵⁸

Second, Indonesia's security has an important economic dimension which is also threatened by the growing levels of conflict over forest resources. The decline in oil palm production just noted is one example. Others include the closure of the \$600 million Porsea pulp mill in North Sumatra, and the stoppage of work on some 10 million ha of logging concessions, noted previously. Illegal logging is costing the government millions in foregone timber royalties.

In broader perspective, the rising level of conflict dampens prospects for new foreign investment, especially when the government publicly admits, as it did in July 2000, that it can no longer guarantee the security of foreign investors' assets.²⁵⁹

Third, the ecological dimensions of forest degradation and loss threaten Indonesia's security in a different but important manner as well. Deforestation has been implicated in increased erosion, flooding, drought, fires, and landslides in many parts of the country, and is thus directly threatening the physical security and health of millions of people, although these

impacts (with the exception of large-scale fires and landslides) are cumulative, and therefore not always as visible as political and economic crises.

The processes eroding these three dimensions of security—political, economic and ecological—reinforce each other. Economic crisis has increased forest clearing by local communities,²⁶⁰ which in turn increases the incidence of erosion, flooding and fires. Mismanagement of logging concessions and perverse forestry sector policy incentives have contributed to rising levels of both illegal logging and civil violence, and so forth. And the erosion off all three dimensions of security make the job of conserving Indonesia's forests far more difficult.

What can be done to break this vicious circle? As noted in the previous section there is a long and daunting list of forest policy reforms that need to be undertaken if deforestation is to be slowed, forest-related conflict is to be reduced, and forest polices are to contribute to Indonesia's security rather than diminishing it. The problem lies in the lack of necessary pre-conditions, outside of the forestry sector, for making and implementing any kinds of policy reforms.

Action is necessary in four areas if there is to be any progress in implementing real forest policy reforms and reducing the level of forest-related conflicts:

7.1 Reform the Legal System and Restore Its Credibility

Indonesia's legal system is virtually non-functional, and the judiciary is widely dismissed as so corrupt as to be useless for the principled resolution of disputes. This is particularly unfortunate for the conflict-ridden forestry sector. If communities cannot receive, and do not expect, a fair hearing and resolution for their disputes with logging and plantation companies, for example, they will continue to take matters into their own hands.

The situation is no better for administrative lawmaking by government bureaucrats (the source of most law in Indonesia), which is arbitrary and confusing—even most bureaucrats admit to not understanding the tangled and contradictory mass of regulations and decrees that they in theory operate under. Interpretation and implementation is largely left to the arbitrary (or corruption-influenced) hands of mid-level bureaucrats, and there are not meaningful avenues for appealing the content of administrative decrees or the decisions made under them. Key areas for legal reform include the following:

- Restructure the judiciary so that it is free of political influence in its decision-making;
- Reform procedural and standing requirements to make the courts more accessible to ordinary citizens;

- Institute and implement an accountable system of administrative law-making that includes provision for public notice and comment and the obligation of agencies to publicly respond to comments;
- Establish strong and clear freedom of information policies and regulations and open official decision-making proceedings to greater public scrutiny and participation.

7.2 Develop Alternate Dispute Resolution Institutions

Even a well-functioning legal system is often poorly-suited to resolving complex, multi-party disputes which may be best resolved by means of a negotiated settlement rather than a black-and-white legal decision. Needed in Indonesia are new dispute resolution mechanisms that can take a more informal and innovative approach to bringing parties together and fashioning compromises than is possible in the judicial system. Indonesia's many distinct traditional cultures have a rich heritage of such dispute resolution systems, although they have been suppressed and disused over the past three decades. In some areas of the country where traditional cultures are still strong, reviving these traditional institutions to help resolve forest-related disputes may be one useful avenue for local progress.

At the national level, a possible option would be the establishment of a National Commission on Community Natural Resource Conflicts. Such a body might function with a core set of respected Commissioners serving fixed terms and drawn from all relevant stakeholder groups, supplemented by specialist advisors brought in to hear particular cases about which they have expertise. Aggrieved parties could petition the Commission for a hearing, which would be granted based on transparent threshold requirements. Parties accused by the plaintiffs would have the opportunity to present their defense. The Commissioners and their advisors would then fashion a proposed agreement, and turn the case over to mediators who would sit with the aggrieved parties to try and come to an agreement.

Such a body would be unlikely to have the power to compel parties to take actions or pay compensation, but it would provide a venue for negotiation, and its decisions would exert a powerful moral force in any subsequent judicial, administrative or legislative proceedings, should the parties be unable to come to an agreement. To maintain its credibility, the proposed Commission would have to have the formal endorsement of the president, but would need to be seen as fully independent of undue influence from government or the private sector. Significant funding would be required to make such a venture work, but it is the kind of idea that international donors, frustrated at the lack of progress in their conventional forestry grant and lending programs, might be interested in funding.

7.3 Resolve the Balance of Power Between National and Local Government and Strengthen the Capacity and Integrity of Local Government Units

The eventual balance of governmental authority between Jakarta on the one hand and the provinces on the other (not to mention the sub-provincial *kabupaten* unit of government) is unknown, and contested. Some degree of decentralization is inevitable, but what form that will take, and how it will affect specific sectors of the economy, is an open question at this point. It is clear, however, that sub-national units of government have very little capacity to manage natural resources. Unfortunately, devolution of powers from the center will surely be based almost wholly on political exigencies—such as amelioration of separatist rebellions in Aceh and Papua—and not on a reasoned appraisal of who can do what best. And decentralization of authority is unlikely to be accompanied by the resources necessary to build effective capacity in local government units.

Clarifying the powers of local governments—and the limits on that power—and strengthening the capacity and integrity of local government officials and institutions are thus among the most pressing priorities for Indonesia. This is particularly important for resolving ongoing forest-related conflicts, since the government must speak with a clear and unambiguous voice if it is to be credible. And it is important for preventing new conflicts from arising as a result of bad policy decisions—already, many local officials are using “regional autonomy” as a pretext for parceling out forest lands and resources in a bid for both official and unofficial income.

7.4 Combat and Reduce Corruption

Despite the fall of the famously corrupt Suharto regime, Indonesia’s government and private sector remain riddled with corruption from top to bottom. Not everyone is corrupt, of course—and there are a few courageous individuals and institutions fighting hard against corruption—but by and large, corruption is accepted an inevitable feature of business and government—despite the periodic sacrifice of a Suharto era crony or officials for investigation and prosecution.²⁶¹ The deficiencies of the legal system and widespread corruption are, of course a vicious circle, feeding on each other.

For the forestry sector, the obstacle to implementing policy reforms are obvious, and are well illustrated by the situation in April 2000, when the Minister of Forestry and Estate Crops alleged that Indonesia’s timber barons were amassing a “war chest” of millions of dollars to be used to bribe judges and other officials to head off planned investigations of corruption in the forestry sector.²⁶² The head of watchdog group Indonesian Corruption Watch expressed pessimism about the outcome of the investi-

gation: "I doubt that any of the tycoons will be punished because the attorneys and judges can easily be bribed."²⁶³

Many of the measures recommended above would help to reduce corruption. But combating corruption must go beyond the institutions of government. The media and NGOs—such as Corruption Watch—have an important role to play in investigating and exposing corrupt practices. Strengthening their capacity and professionalism to do so is therefore an important priority for investment and action.

This is a daunting reform agenda, and it obviously encompasses matters well beyond the ambit of the forestry sector and forest-related conflicts. Some might say it is unrealistic, and indeed, this author is pessimistic that such changes are likely to come about in the near future. But, as Raikes points out, it is difficult to make "practical suggestions," when one's research "tends to show that what is politically feasible is usually too minor to make any difference, while changes significant enough to be worthwhile are often unthinkable in practical political terms."²⁶⁴

Indonesia's recent history of conflict and bloodshed—much of it forest-related—demands bold action. Otherwise, the future is likely to be as grim as the present for both Indonesia's forests and its people.

Endnotes

115. For a seminal article on the topic, see J.T. Mathews, "Redefining security," *Foreign Affairs* 68 (1989), pp.162–177. Also see the considerable body of work by Thomas Homer-Dixon and colleagues: T.F. Homer-Dixon, "On the threshold: Environmental changes as causes of acute conflict," *International Security* 16(2) (1991), pp. 76–116; T.F. Homer-Dixon, J.H. Boutwell and G.W. Rathjens, "Environmental change and violent conflict," *Scientific American* (February 1993), pp. 38–45; T.F. Homer-Dixon, "Environmental scarcities and violent conflict: Evidence from cases," *International Security* 19(1) (1994), pp. 76–116; T.F. Homer-Dixon, *Environment, scarcity, and violence*. Princeton, N.J.: Princeton University Press, 1999. For reviews on the "state-of-the-art" on the topic, see: G.D. Dabelko and P.J. Simmons, "Environment and security: Core ideas and U.S. government initiatives," *SAIS Review* 17(1) (1997), pp.127–146; G.B. Dabelko, S. Lonergan and R. Matthew, *State-of-the-Art Review on Environment, Security and Development Co-operation* (Gland: IUCN, 1998).

For an early attempt to apply environment-and-security analysis to forest issues in Southeast Asia, see P.T. Greenwald, *The United States and environmental security: Deforestation and conflict in Southeast Asia*. (Thesis, Naval Postgraduate School, Monterey, CA, June 1992). For an application of Homer-Dixon's analytical framework to Indonesia's forest resources, see: C.V. Barber, *Environmental scarcities, state capacity, civil violence: The case of Indonesia* (Cambridge, MA: American Academy of Arts and Sciences and University College, University of Toronto, 1997); and C.V. Barber, "Forest

- resource scarcity and social conflict in Indonesia." *Environment* 40(4) (May 1998).
116. G.B. Dabelko, S. Lonergan and R. Matthew (1998), pp. 5, 21.
117. D. Deudney, "The case against linking environmental degradation and national security," *Millennium Journal of International Studies* 19(3) (1990), pp. 461–476.
118. For authoritative accounts of the politics and economics of the Suharto Era, see: A. Schwarz, *A nation in waiting: Indonesia in the 1990s* (St. Leonards, Australia: Allen and Unwin, 1994); H. Hill (ed), *Indonesia's New Order: The dynamics of socio-economic transformation* (St. Leonard's, Australia: Allen and Unwin, 1994).
119. For accounts and analysis of the fall of Suharto see: G. Forrester & R.J. May (eds.), *The Fall of Soeharto* (Singapore: Select Books, Ltd., 1999). Many analyses of the East Asian economic crisis and its impacts on Indonesia have been published since 1998. See, for example: H.W. Arndt and H. Hill (eds.), *Southeast Asia's economic crisis: Origins, lessons, and the way forward* (Singapore: Institute of Southeast Asian Studies, 1999).
120. On Habibie's presidency, see D.F. Anwar, "The Habibie Presidency" and other articles in G. Forrester (ed.), *Post-Soeharto Indonesia: Renewal or chaos?* (Singapore: Institute of Southeast Asian Studies).
121. On the complex process and politics by which Wahid become president in October 1999, see: "Dark Before Dawn: How Elite Made A Deal Before Indonesia Woke Up," *The Wall Street Journal*, November 2, 1999.
122. For an analysis of Wahid's first years in office and his tenuous hold on power as of early 2001, see International Crisis Group, "Indonesia's presidential crisis," Briefing Paper (February 21, 2001). Available through: <http://www.intl-crisis-group.org>.
123. On East Timor's violent independence referendum, see: United Nations Office of the High Commissioner for Human Rights (UNHCR), *Report of the International Commission of Inquiry on East Timor to the Secretary-General*. (Geneva: UNHCR, January 2000).
124. On Aceh's separatist struggle, see: G. van Klinken, "Whither Aceh? An update on events in 1999." *Inside Indonesia* 62 (April–June 2000), available at <http://www.insideindonesia.org>; and "Indonesia's Aceh Conflict Smoulders On," *Asian Wall Street Journal*, April 26, 2000. On separatism in Papua (Irian Jaya), see: "Irian Jaya wants to shake off Indonesian rule," *Agence France-Presse*, December 1, 1999; and J. Rumbiak, "Statement of West Papua at the 56th Commission on Human Rights," United Nations Commission on Human Rights, 56th Session, Agenda Item 11: Civil and Political Rights. Geneva, April 6, 2000.
125. A. Booth, "Rich regions reject Jakarta hand," *Jakarta Post*, November 22, 1999.

126. "Workshop questions Indonesia's autonomy laws... and expert urges 'some form of federalism'," *Jakarta Post*, July 18, 2000; "Logical flaws in regional autonomy," *Jakarta Post*, May 2, 2000.
127. International Crisis Group, Indonesia: Overcoming murder and chaos in Maluku (December 19, 2000), <http://www.intl-crisis-group.org>. "Bloodbath Grips Indonesia," *Far Eastern Economic Review*, July 6, 2000 (cover story).
128. "Savage Attacks Terrorize Migrants on Borneo," *Washington Post*, February 24, 2001; "211 confirmed dead in Poso [Central Sulawesi] clashes," *Jakarta Post*, July 7, 2000; "Communal violence hits Kumai in Central Kalimantan," *Jakarta Post*, July 7, 2000; "West Kalimantan: Tension between ethnic groups obscures future," *Jakarta Post*, February 15, 2000; "Communal violence leaves over 765,000 refugees across Indonesia," *Agence France-Presse*, June 20, 2000.
129. "Communal violence leaves over 765,000 refugees across Indonesia," *Agence France-Presse*, June 20, 2000.
130. "The New Face of Indonesian Justice: The legacy of police violence in the Suharto era lives on in an upsurge of brutal vigilante attacks," *Far Eastern Economic Review*, July 13, 2000 (cover story).
131. "Black magic killings spread to Central Java," *Indonesian Observer*, January 26, 2000.
132. On the Indonesian military since the fall of Suharto, see: "Skeletons, vigilantes and the Armed Forces' fall from grace," In A Budiman, B. Hatley and D. Kingsbury (eds), *Reformasi: Crisis and change in Indonesia*. (Clayton, Australia: Monash Asia Institute, 1999), pp. 149–172.
133. J. Saunders, "Indonesian forces are part of the problem in the Moluccas," *International Herald Tribune*, July 4, 2000.
134. In July 2000, the Minister of Defense admitted that the government's police and military were unable to maintain security in the country, and that it would take "between 10 and 15 years" to build a well-functioning police force. "Indonesian government cannot guarantee internal security: minister," *Agence France-Presse*, July 12, 2000.
135. "Audit implicates top brass of Suharto regime," *Business Times* (Singapore), July 5, 2000.
136. "Audit shock: Jakarta's missing billions," *Straits Times* (Singapore), July 18, 2000.
137. "Experts divided on plan to 'import judges'," *Indonesian Observer*, April 5, 2000. For analysis of corruption in the Indonesian legal system, see: "A matter of law....and, of course, order," *The Economist*, July 8, 2000; "Reform of the legal system Indonesia's top challenge: minister," *Agence France-Presse*, March 9, 2000; and T. Lindsey, "Black letter, black market and bad faith: Corruption and the failure of law reform," In C. Manning and P. van Diermen (eds), *Indonesia in transition: Social aspects of reformasi and crisis* (Singapore: Institute of Southeast Asian Studies, 2000), pp. 278–292.

138. T.F. Homer-Dixon (1991); T.F. Homer-Dixon, J.H. Boutwell and G.W. Rathjens, (1993); T.F. Homer-Dixon (1994); T.F. Homer-Dixon (1999).
139. T.F. Homer-Dixon (1999).
140. For detailed analysis of the political uses of "forest lands" in Indonesia, see C.V. Barber (1997).
141. M.R. Dove, "Introduction: Traditional culture and development in contemporary Indonesia." In M.R. Dove (ed.) *The real and imagined role of culture in development: Case studies from Indonesia* (Honolulu: University of Hawaii Press, 1988), pp. 1–37.
142. "Undercut: Illegal mining has reached unprecedented levels, harming legitimate companies and putting the economy and environment at risk," *Far Eastern Economic Review*, July 13, 2000.
143. N. Hildyard, "'Blood' and 'Culture': Ethnic Conflict and the Authoritarian Right," CornerHouse Briefing 11 (January 1999).
144. S. Kaul, "Ethnic conflict or policy failure?" *Jakarta Post*, March 9, 2001.
145. V. England, "Culture of Cruelty," *South China Morning Post*, March 10, 2001.
146. "Indonesian defence minister blames unrest on Suharto loyalists," *Agence France-Presse*, June 21, 2000.
147. One observer noted in March 2001 that "if President Wahid is forced from office in the coming months, as many think he will be, the horrific ethnic cleansing on Borneo may prove to be the catalyst for his demise." Joe Cochrane, "Analysis: Borneo clashes the beginning of the end for Indonesia's Wahid," *Deutsche Presse-Agentur*, March 12, 2001.
148. For a detailed analysis of the importance of Indonesia's forest biodiversity in global perspective, see R.A. Mittermeier and C.G. Mittermeier, *Megadiversity: Earth's biologically wealthiest nations* (Mexico City: CEMEX, 1997).
149. Hasan, who dominated the forestry sector during the Suharto era, is currently under investigation for having corruptly misused some \$87 million from the Forestry Ministry's Reforestation Fund intended for mapping—via satellite imagery and aerial photography—of the country's 30 million ha of Protection Forests. An additional \$176 million—"donated" under duress by members of the Indonesian Association of Forest Industries (APHI)—was supposed to be used to map Production Forests. The contract went to a company owned by Hasan, P.T. Mapindo Parama. According to a June, 2000 report from the Ministry of Forestry and Estate Crop's Inspector General, "most of the results of [Mapindo's] work were unusable because the work was not done in accordance with the technical specifications...did not include required field surveys, and took so long to complete that it was completely out of date." ("Analysis and Discussion Paper by the Inspector General," National

- Working Meeting, Ministry of Forestry and Estate Crops, June 26–29, 2000, 11–12. [translation from original by author.]
150. Government of Indonesia (GOI), *Indonesia forestry action programme*, Vol II (Jakarta, 1991), p. 9.
151. World Bank, “Deforestation in Indonesia: A Preliminary View of the Situation in 1999,” Draft Report (Jakarta: World Bank, May 5 2000).
152. Ministry of Forestry and Estate Crops, May 2000.
153. D. Bryant, D. Neilsen and L. Tangle, *The last frontier forests: Ecosystems and economies on the edge* (Washington D.C.: WRI, 1997), p. 21.
154. National Development Planning Agency (BAPPENAS), *Biodiversity action plan for Indonesia* (Jakarta, 1993), pp. 1–2.
155. World Bank, *The challenges of World Bank involvement in forests: An evaluation of Indonesia’s forests and World Bank assistance* (Washington, D.C.: World Bank, January 2000).
156. “Forest export earnings to exceed \$8 B in 2000,” *Jakarta Post*, January 10, 2000.
157. Rencana Strategik 2001–2005 [Strategic Plan 2001–2005] (Jakarta: Ministry of Forestry and Plantations, July 2000).
158. *Ibid.*
159. J.H. De Beer and M.J. McDermott, *The economic value of non-timber forest products in Southeast Asia* (Amsterdam: Netherlands Committee for IUCN, 1996), Second Revised Edition, p. 74.
160. Rencana Strategik 2001–2005 [Strategic Plan 2001–2005].
161. C. Zerner, “Indigenous forest-dwelling communities in Indonesia’s outer islands: Livelihood, rights, and environmental management institutions in the era of industrial forest exploitation,” Consultancy Report prepared for the World Bank Indonesia Forestry Sector Policy Review (Washington, D.C.: Resource Planning Corporation, 1992), p. 4.
162. Rencana Strategik 2001–2005 [Strategic Plan 2001–2005].
163. W.D. Sunderlin and I.A.P. Resosudarmo, *Rates and causes of deforestation in Indonesia: Towards a resolution of the ambiguities* (Bogor, Indonesia: Center for International Forestry Research, 1996).
164. World Bank (2000).
165. “Poaching brings the extinction of the Sumatran tiger near,” *Deutsche Presse-Agentur*, December 20, 1999; “Rape of forest threatens to wipe out orang-utans,” *The Guardian*, March 23, 2000.
166. World Bank (2000).

167. Indonesia's forestry laws divide forest lands into Limited or Regular "Production Forests;" "Protection Forests" (set aside to protect watersheds or erosion-prone slopes); "Conservation Forests," including National Parks and Nature Reserves; and "Recreation Forests," including Hunting and Tourism Parks. In addition, some forest lands could be classified as Forest Available for Conversion to non-forest uses, while a small remainder are "Unclassified Forests." Under the province-by-province Consensus Forest Land Use Planning process (TGHK) undertaken in the 1980s, government-controlled Forest Area in each province was divided into these various categories and recorded on official maps. The TGHK forest land use allocations have been revised numerous times since the mid-1980s, but still represent the basic legal framework for forest land use.
168. C. Barr, "Will HPH reform lead to sustainable forest management?: Questioning the assumptions of the 'sustainable logging' paradigm in Indonesia," In C.J. Pierce Colfer and I.A. Pradnja Resosudarmo (eds.), *Which way forward? Forests, policy and people in Indonesia* (Washington DC: Resources for the Future, forthcoming, 2001).
169. "Conversion" forests are legally designated forest lands slated for conversion to non-forest uses such as agricultural plantations, transmigration settlements, industry, and other uses. Areas converted from natural forest to timber or pulp plantations are still categorized as "forest," although the monocultural industrial tree plantations common in Indonesia are not, in fact natural forests.
170. Government of Indonesia (GOI) and International Institute for Environment and Development (IIED), *Forest policies in Indonesia: The sustainable development of forest lands* (Jakarta: GOI and IIED, 1985). (In three volumes.)
171. J. Romm, "Forest development in Indonesia and the productive transformation of capital," presented at the Ninth Annual Conference on Indonesian Studies (31 July–3 August, 1980, Berkeley, CA).
172. M. Gillis, "Indonesia: Public policies, resource management, and the tropical forest," in R. Repetto and M. Gillis (eds.), *Public policies and the misuse of forest resources* (Cambridge, U.K.: Cambridge University Press, 1988), pp. 43–104.
173. C. Mackie, "The lessons behind East Kalimantan's forest fires," *Borneo Research Bulletin* 16 (1984), pp. 63–74.
174. The ban on the export of unprocessed logs was phased in from 1982–1985, reflecting two government concerns. First, there were worries about the unsustainability of logging, and it was assumed that once logging firms were downstream timber processors, they would have more concern for their supply of raw materials and would improve their logging practices. Second, the government had originally assumed that granting large areas for logging would inevitably result in the development of downstream processing industries as the result of market forces, but this had not happened by the early

- 1980s. P.K. Gellert, "The limits of capacity: The political economy and ecology of the Indonesian timber industry, 1967–1985," Unpublished Doctoral Dissertation (University of Wisconsin-Madison, 1998), pp. 143–147.
175. P.K. Gellert (1998).
176. "Watchdog eyes forestry scams," *Indonesian Observer*, January 5, 2000.
177. D.W. Brown, *Addicted to Rent: Corporate and Spatial Distribution of Forest Resources in Indonesia; Implications for Forest Sustainability and Government Policy* (Jakarta: Indonesia-U.K. Tropical Forest Management Programme, September 1999).
178. Concessions transferred to the management of the state-owned Inhutani forestry firms were generally managed by firms with particularly bad logging practices or who were not working the concessions due to financial or other problems.
179. J. Fox, M. Wasson and G. Applegate, "Forest use policies and strategies in Indonesia: A need for change," Paper prepared for the World Bank (Jakarta May, 2000).
180. "Indonesia stops issuing fresh forestry concession licenses." *Asia Pulse/Antara*, April 18, 2000.
181. *Ibid.*
182. "Indonesia issues 21 new forest concessions." *Reuters*, November 21, 2000.
183. "Wood-processing firms to face log scarcity: Minister," *Jakarta Post*, October 1, 1998.
184. "Indonesia stops issuing fresh forestry concession licenses." *Asia Pulse/Antara*, April 18, 2000.
185. Indonesia-U.K. Tropical Forest Management Programme, "A draft position paper on threats to sustainable forest management in Indonesia: Roundwood supply and demand and illegal logging," Report No. PFM/EC/99/01. (Jakarta, 1999).
186. "Indonesia faces forest dilemma: Donors seek curbs on logging but powerful interests are involved," *International Herald Tribune*, February 1, 2000.
187. "Timber fencing and smuggling still rampant," *Jakarta Post*, July 3, 1996; "Legislators urge government to stop timber brokers," *Jakarta Post*, July 3, 1996.
188. "Security personnel aid timber thieves," *Jakarta Post*, May 15, 2000.
189. The Consultative Group on Indonesia (CGI) includes all of Indonesia's major international donors, and is the major forum in which targets and levels for aid and multilateral lending are set. It is chaired by the World Bank.
190. "Indonesia faces forest dilemma: Donors seek curbs on logging but powerful interests are involved," *International Herald Tribune*, February 1, 2000.

191. "Analysis and Discussion Paper by the Director General for Protection and Conservation of Nature," National Working Meeting of the Ministry of Forestry and Estate Crops (June 26–29, 2000), pp. 13–14. (Translation from original by the author.)
192. "Military, judiciary urged not to support illegal logging," *Indonesian Observer*, June 20, 2000.
193. "Illegal logger steal Indonesia's market share in China," *Asia Pulse/Antara*, June 23, 2000.
194. "Indonesia–wood cuts: Illegal logging could stem the flow of aid to Indonesia," *Far Eastern Economic Review*, January 27, 2000.
195. The 1991 Indonesian Forestry Action Programme stated that "...the role of plantation forests in supplementing natural forest resources will also be very important to conservation objectives in the country." Government of Indonesia, Indonesia Forestry Action Programme, Vol. 2 (GOI: Jakarta, 1991), p. 60.
196. Ministry for Forestry and Estate Crops data, in *Tropis* No. 9 (Jakarta, August 1999).
197. *Ibid.*
198. "Wood-processing firms to face log scarcity: Minister," *Jakarta Post*, October 1, 1998.
199. World Bank, "World Bank involvement in sector adjustment for forests in Indonesia: The issues," Unpublished memorandum (Jakarta, 1998), 24 pp.
200. A. Purnomo, "Overcapacity in the forestry sector," *Jakarta Post*, January 27, 2000.
201. World Bank, "Indonesia Forestry Sector Review," Draft (Jakarta, 1993), pp. 38–39.
202. Ministry for Forestry and Estate Crops data, in *Tropis* No. 9 (Jakarta, August 1999).
203. "BUMN, Grup Besar Ikut Bakar Hutan," ["State firms, Conglomerates, Burned the Forest"], *Media*, September 18, 1997.
204. CIC Consulting Group, Study on palm oil industry and plantation in Indonesia, 1997 (Jakarta: PT Capricorn Indonesia Consult, Inc., 1997).
205. H. Kartidihardjo and A. Supriono, The impact of sectoral development on natural forest: The case of timber and tree crop plantations in Indonesia (Bogor, Indonesia: Center for International Forestry Research (CIFOR), 1999); A. Casson, *A forest of palms: The political economy of Indonesia's oil palm sub-sector and the fate of the forest* (Bogor, Indonesia: CIFOR). These two paper give varying figures for the area planted with oil palm through 1997, estimating 2.25 million ha and 2.5 million ha respectively.
206. CIC Consulting Group (1997).

- 207.H. Kartidihardjo and A. Supriono (1999)
- 208.E. Wakker, Funding forest destruction: The involvement of Dutch banks in the financing of oil palm plantations in Indonesia (Amsterdam and Bogor, Indonesia: AIDEnvironment, in co-operation with Jan Willem van Gelder Contrast Advies and the Telapak Sawit Research Team. Commissioned by Greenpeace Netherlands, 2000).
- 209.L. Potter and J. Lee, "Tree planting in Indonesia: Trends, impacts, and directions," Final Report of a consultancy for the Center for International Forestry Research (CIFOR) (Adelaide, Australia, February 1998).
- 210.H. Kartidihardjo and A. Supriono (1999).
- 211.E. Wakker, "Introducing zero burning techniques in Indonesia's oil palm plantations," Unpublished WWF Indonesia report (Jakarta, 1998).
- 212.World Bank, "Indonesia transmigration program: A review of five Bank-supported projects," Report No. 12988 (Washington, D.C.: World Bank, 1994).
- 213.L. Potter and J. Lee (1998).
- 214.CIC Consulting Group (1997).
- 215."Anger, Violence End Indonesia's 'Transmigration' Program," *Associated Press*, December 12, 2000.
- 216.National Development Planning Agency (BAPPENAS), Final Report, Annex I: Causes, extent, impact and costs of 1997/98 fires and drought. Asian Development Bank Technical Assistance Grant TA 2999-INO, Planning for Fire Prevention and Drought Management Project. (April, 1999).
- 217.E.E. Harwell, "Remote sensibilities: Discourses of technology and the making of Indonesia's natural disaster," *Development and Change* 31 (2000), pp. 307-340.
- 218.*Ibid.*
- 219."Jakarta promises a haze-free year," *Straits Times*, April 5, 2000.
- 220."Indonesia Fires Spread, Smog Reaches Thailand," *Reuters*, July 19, 2000.
- 221."Thick Smog Shuts Indonesia's Medan Airport," *Reuters*, July 20, 2000.
- 222."Jakarta has no plan to combat forest fires," *Straits Times*, July 18, 2000.
- 223."Where in the world are the firefighters? Hundreds of fires are burning across Riau province, but no one is fighting them nor are police arresting suspects," *Straits Times*, July 28., 2000.
- 224."Sony 'powerless' to cope with forest fires," *Jakarta Post*, July 31, 2000. In the same interview, the Minister (Sony Keraf) recounted how he had confronted the governor of West Kalimantan with clear satellite data implicating two companies in the ongoing fires in that province. Despite the evidence, the governor bluntly denied the charge. World Bank, "Indonesia: Stability,

growth and equity in Repelita VI," Report No. 12857-IND (Washington, D.C., 1994), p. vii.

225. *Ibid.*

226. C.V. Barber (1997)

227. "Plywood investors back off," *Jakarta Post*, March 18, 2000. Results of the APHI survey of concession-related conflicts, including names of companies and the specific demands of local communities, were published in "Darurat: Konflik Sosial" ["Emergency: Social Conflict"], Hutan Indonesia [Indonesian Forests, APHI's newsletter] No 7, March 2000.

228. "Conflicts between locals and timber companies to grow," *Jakarta Post*, March 9, 2000. The article quoted the Director General of Forest Production as saying that "social jealousy" was probably behind the conflicts, and that concessions were probably disregarding local concerns and taking their lands without compensation.

229. T. Tomich *et. al*, "Indonesia's fires: Smoke as a problem, smoke as a symptom," *Agroforestry Today*, 10(1), (January–March 1998); C.V. Barber and J. Schweithelm, Trial by fire: Forest fires and forest policy in Indonesia's era of crisis and reform (Washington, DC: World Resources Institute, 2000).

230. N.L. Peluso, *Rich forests, poor people: Resource control and resistance in Java* (Berkeley, CA: University of California Press, 1992).

231. A. Casson, The hesitant boom: Indonesia's oil palm Sub-Sector in an era of economic crisis and political change (Bogor, Indonesia: Center for International Forestry Research (CIFOR), February 2000).

232. *Ibid.*

233. *Ibid.*

234. *Ibid.*

235. See, for example: "Locals in Jambi burn down 65 houses of transmigrants," *Indonesian Observer*, January 24, 2000; "Ethnic and religious conflict: Transmigrants and refugees," *Down To Earth* 44 (London, U.K.: February, 2000); "Dayaks in West Kalimantan reject return of Madurese," *Indonesian Observer*, March 6, 2000.

236. "Migration: Cold Comfort," *Far Eastern Economic Review*, March 30, 2000.

237. For a detailed assessment of the situation in 20 of Indonesia's protected areas, see M. Wells *et al.*, *Investing in biodiversity: A review of Indonesia's integrated conservation and development projects* (Washington DC: World Bank, 1999).

238. "Locals take over most of Lore-Lindu National Park," *Indonesian Observer*, January 12, 2000.

239. "Foreign NGO blasts destruction of national park," *Indonesian Observer*, January 20, 2000.

240. J. Newman, A Ruwindrijarto, D. Currey and Hapsoro, *The final cut: Illegal logging in Indonesia's orangutan parks*. Jakarta and London: Environmental Investigation Agency and Telapak Indonesia.
241. C.V. Barber and A. Nababan, "Eye of the tiger: Conservation policy and politics on Sumatra's rainforest frontier," unpublished research report (Washington DC and Bogor, Indonesia: World Resources Institute and Telapak Indonesia, 1997).
242. The Spatial Use Management Law (No. 24/1992).
243. The Basic Law on Regional Government (No. 22/1999) and The Basic Law on Financial Balance Between Central and Regional Government (No. 25/1999). For a detailed analysis of the provisions in these two laws, see H. Haeruman, "Law No. 22/1999: Regional autonomy over natural resources" and H. Haeruman, "Law No. 25/1999: Natural resource revenue sharing", both in NRM News 1(1) (Jakarta: Natural Resources Management Program, February 2000).
244. J. Fox, M. Casson and G. Applegate, *Forest use policies and strategies in Indonesia: A need for change* (Jakarta: World Bank, 2000), p. 26.
245. "Forestry ministry 'rejects autonomy'," *Jakarta Post*, May 3, 2000.
246. "Timber firms halt work due to conflicts with locals," *Jakarta Post*, March 4, 2000.
247. World Bank, "World Bank Involvement in Sector Adjustment for Forests in Indonesia: The Issues," Unpublished memorandum (Jakarta, 24 pp).
248. For a detailed analysis of the role of World Bank forest policy conditionalities in structural adjustment programs, including a case on Indonesia, see F.J. Seymour and N.K. Dubash *et al.*, *The right conditions: The World Bank, structural adjustment, and forest policy reform* (Washington, DC: World Resources Institute).
249. For a detailed argument that the "sustainable logging paradigm" promoted by the World Bank for Indonesia – built around the principles of selective cutting, full rent capture and market-based efficiency – is unlikely to succeed in reducing timber harvests to sustainable levels, see: C. Barr, (forthcoming, 2001).
250. See, for example, "Indonesia's Indigenous Peoples' demands for change," *Down to Earth* newsletter 43 (U.K., November 1999).
251. Strategic Plan for the Ministry of Forestry and Plantations, 2001–2005. (Jakarta: Ministry of Forestry and Plantations, July 2000).
252. "Indonesia—wood cuts: Illegal logging could stem the flow of aid to Indonesia," *Far Eastern Economic Review*, January 27, 2000.
253. *Ibid.*

254. Decree of the Minister of Forestry and Plantations No. 146/2000 Concerning Evaluation and Procedures for Converting Forest Lands for Plantation Development.
255. Analysis and Discussion Paper by the Director General for Protection and Conservation of Nature," National Working Meeting of the Ministry of Forestry and Estate Crops, June 26–29, 2000.
256. A. Purnomo, "Overcapacity in the forest sector," *Jakarta Post*, January 27, 2000.
257. Haryanto (ed), *Kebutanan Indonesia Pasca Soeharto: Reformasi Tanpa Perubahan. [Indonesian Forestry After Soeharto: Reform Without Change]* (Bogor: Pustaka Latin, 1998).
258. "Interview: Indonesian palm oil output could slow—GAPKI [Indonesia Palm Oil Producers Association]," *Reuters*, July 3, 2000.
259. "Security dilemma for investors," *Jakarta Post*, July 17, 2000.
260. W.D. Sunderlin *et al.* (2000).
261. Indeed, corruption charges were filed against Suharto himself in July 2000, although President Wahid has already pledged that he will pardon the former president, and he is unlikely to even be brought into court. See "Charges Filed Against Suharto in Indonesian Corruption Case," *International Herald Tribune*, July 27, 2000.
262. "Indonesian tycoons preparing bribes to disrupt probe," *Business Times* (Singapore), April 6, 2000.
263. "Forestry graft probe has no teeth: ICW," *Jakarta Post*, May 1, 2000.
264. P. Raikes, *Modernizing Hunger* (London: Catholic Institute for International Relations, 1988).

